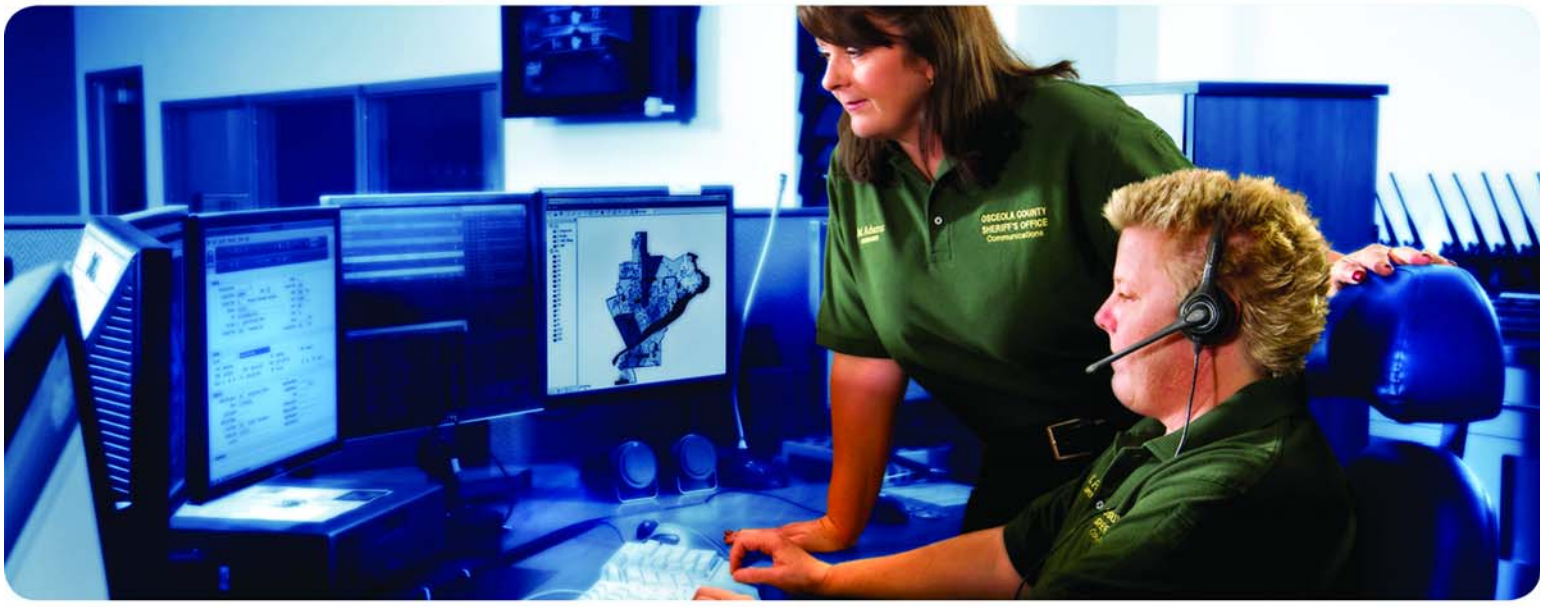
[S] | Flex



Automatic Vehicle Location (AVL) Manual

spillman technologies, inc.

reliable innovation

Spillman® Public Safety Software

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Table of Contents

Using this manual 7
Other manuals 7
Windows basics 8
Manual conventions 8

1 User Information 11

Introduction 12
Using the Unified Network Service (UNS) interface 12

Understanding AVL Devices 13
Understanding AVL device connections 13
Viewing the GPS status indicator 13
Using the GPS receiver 14
Checking the status of the GPS receiver 15

Using AVL 16
Viewing AVL devices 16
Using the AVL device filter 17
Using the Follow My Unit feature 19
Turning on Auto Panning 22
Viewing AVL device information 22
Viewing unit information 24
Using AVL alerts 25
Dismissing AVL alerts 27
Using CAD commands with AVL devices 27
Using the UV command 28

Customizing AVL Settings 29
Selecting the units that appear on the map 29
Using the Set Zone Filter 30
Using the Set Agency Filter 30

Defining the appearance of unit and device markers 30
Defining markers for Mobile 31
Defining markers for CAD 32
Setting auto-zoom options 32

2 Administrator Information 35

Introduction 36

Determining if your device is compatible 36
Types of AVL connections 37

Setting Up System Privileges and Module Settings 38

Setting up system privileges 38
Setting up module settings 38

Setting Up AVL Connections 40

Setting up a client connection 40
Enabling the GPS receiver 40
Using a Garmin GPS 18x OEM device 42
Setting up a server connection 45
Setting up a UNS connection 45

Using the AVL Manager Web Application 46

Accessing the AVL Manager 46
Using the Properties tab 47
Configuring AVL server properties 48
Configuring UNS server properties 48
Using the AVL Icons tab 49
Using the AVL Agency Manager tab 50
Using the AVL Manager tab 53
Blocking Flex configurations 58
Blocking configurations on a World level 58
Blocking configurations on an Agency level 59
Blocking configurations for specific devices 59

Viewing AVL Log Records 61

Viewing AVL Log records in Flex 61

Viewing AVL log records in Google Earth 63
Exporting AVL Log records to Google Earth 63
Retrieving a saved KML file 66
Understanding Google Earth 67

Preface

Welcome to the *Automatic Vehicle Location (AVL) Manual*. This manual is written for users about how to use the AVL module, and for administrators about how to successfully set up and maintain the AVL module for Spillman Flex.

Using this manual

This manual describes the following information:

- Chapter 1 provides an introduction to users about the AVL module with all map versions. Information includes how to use the GPS device, viewing devices on the map, and setting AVL options.
- Chapter 2 provides information to administrators about how to complete the tasks required to use the module, including setting up application parameters, user privileges, devices, and so forth. These instructions apply to all map versions.

Other manuals

The *Mobile User Manual* provides information for the user on how to use Mobile, Voiceless CAD, Mobile Mapping, and more. The *CAD User Manual* provides information on how to use the CAD module and all CAD Mapping versions. The *CAD User Manual* also describes Quickest Route works with the CAD Mapping module. The *Quickest Route Manual* describes how to set up and use the Quickest Route module with the Classic CAD Mapping module.

The *Application Setup and Maintenance Manual* provides information for the Spillman Application Administrator (SAA) at your agency, including procedures for installing and maintaining Flex. The *Code Table Setup and Maintenance Manual* provides information for adding and maintaining your agency's code tables. The *Security Setup and Maintenance Manual* provides information for protecting your agency's system and setting up system privileges.

Windows basics

Before using the software, be familiar with the standard features of Microsoft® Windows®. At a minimum, know how to do the following:

- Use a mouse or keyboard to perform basic tasks, such as choosing menu options and buttons.
- Work with windows, such as selecting, minimizing, restoring, maximizing, sizing, scrolling, closing, and so forth.
- Work with dialog boxes.

If these tasks are unfamiliar, then refer to your Windows online documentation or complete an online Windows tour.

Manual conventions

When using this manual, note the following conventions.

Convention	Meaning/Use	Examples
bold	Used for names of menus, options, text boxes, buttons, fields, and other items that appear on the screen.	**OK** is a button on the screen. Click **OK**, or press Enter.
angle bracket (>) between items	Shows the menu option(s) that must be selected, in sequence, to get to a specific option.	From the Start menu, select **All Programs** > **Spillman** > **Spillman Mobile**.
plus sign (+) between keys	Used for keys that are pressed at the same time. Hold down the first key, and then press the other key(s). When a keystroke is available for a mouse action, both the mouse action and the keystroke are presented.	Press Ctrl+E. Click **Close**, or press Ctrl+F4.
comma (,) between keys	Used for keys that are pressed in sequence. Press and release each key, in the order shown.	Press Alt, F, O to open the File Options dialog box.
`Courier font`	Used for displayed text. Used for table names.	The software prompts: `Are you sure you want to delete this record?` Open the Names table (`nmmain`).
`bold Courier font`	Used for information you enter.	Enter the street address, such as **`401 W Sycamore St`**.
italics	Used for emphasis. Used for variable information you supply.	Enter the date, using the *mm/dd/yyyy* format.

The following boxes indicate special information.

NOTE

Notes call attention to information that is of particular importance or that varies depending on a particular condition, such as the way your Spillman Application Administrator (SAA) has configured the software.

TIP

Tips present recommendations, optional actions, and additional ways to perform specific tasks.

CAUTION

Cautions point out actions that might endanger your data or its integrity (usefulness) or cause other problems later.

Features on your computer depend on your software version, modules, and privileges. Actual screens on your computer may vary from the example screens shown in this manual. However, any differences are minor and do not affect the tasks being described.

To find more manuals visit MySpillman or the Spillman Knowledgebase.

Chapter 1

User Information

Introduction 12
Understanding AVL Devices 13
Using AVL 16
Customizing AVL Settings 29

Introduction

The AVL module uses an Automatic Vehicle Location (AVL) system to track the location of your agency's units and other AVL devices. To use the AVL module, your agency must have the Mobile Mapping module. For the AVL system to track units, your Spillman Application Administrator (SAA) installs a Global Positioning System (GPS) receiver in each unit that your agency wants to track. The GPS receiver measures the unit's distance from a group of GPS satellites, and then uses that measurement to calculate the unit's latitude and longitude coordinates.

The software uses latitude and longitude coordinates to position the units and devices on the map and recommend units based on their current location when a user dispatches a Computer-Aided Dispatch (CAD) call. Call, unit, and device locations are displayed on the map.

This manual describes how the AVL module affects all mapping modules. Unless otherwise noted, both Mobile and CAD are affected in similar ways.

This manual also describes how the Motorola Unified Network Service (UNS) Interface works with the AVL module.

The features described in this manual apply to Spillman Flex. For AVL features in previous software versions, see the *Mobile User Manual* for Mobile 4.6 and the *CAD User Manual* for the applicable version.

Using the Unified Network Service (UNS) interface

The Motorola Unified Network Service (UNS) interface is designed to work with the AVL module to allow Motorola GPS devices that report to a UNS server to display on the map in CAD and Mobile. In addition, when an officer uses the emergency button of a Motorola GPS device, dispatchers and other officers are notified on the map in CAD and Mobile.

The UNS interface affects the map in CAD and Mobile in similar ways, unless otherwise noted.

Your agency must have both the UNS interface and the AVL module to communicate with UNS devices.

Understanding AVL Devices

An AVL device is any device with a GPS receiver that communicates with your agency's server to track its location on a map. For example, the GPS receiver installed in a vehicle or laptop. If your agency has the UNS Interface, then UNS-compatible devices, such as some Motorola radios, are also AVL devices.

Any kind of AVL device, including UNS devices, can be assigned to a unit. All AVL devices can be viewed on the map, regardless of whether or not they are assigned to units. However, for a unit to be viewed on the map, the unit must be assigned an AVL device.

Understanding AVL device connections

The AVL devices your agency uses can communicate with your agency's server using the following methods:

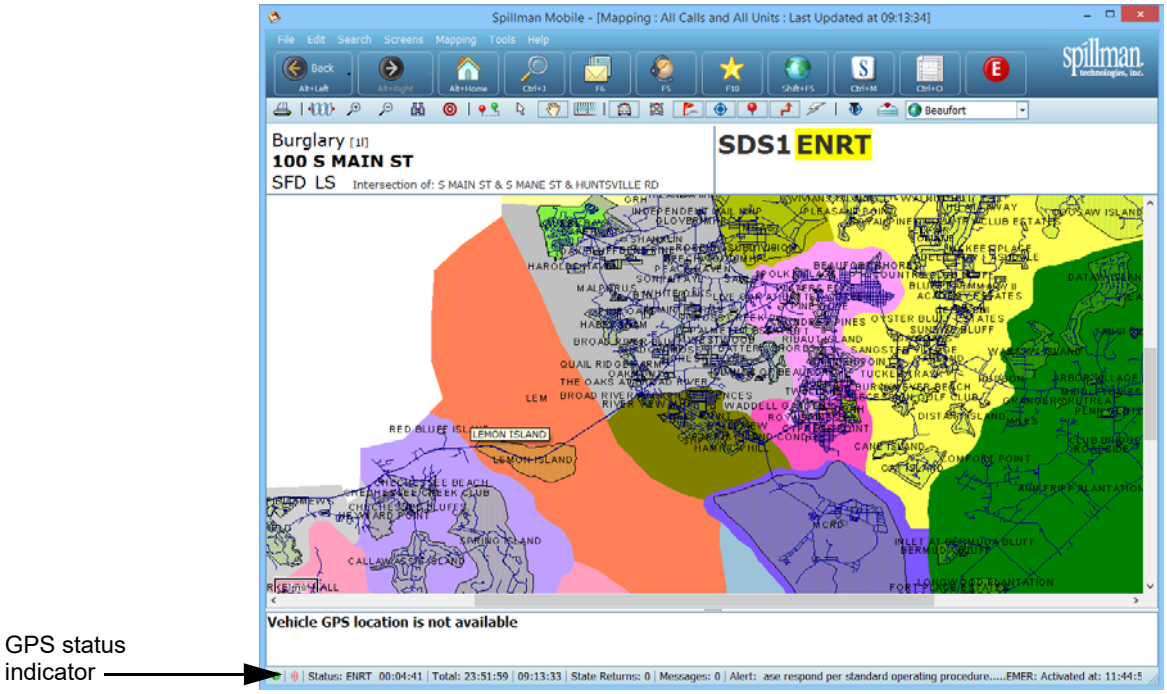
- **Server connection.** A server connection has the GPS receiver communicate directly with the server. The GPS receiver and the wireless modem are combined in one product. Communication between the server and the GPS receiver begins as soon as the device is powered on. This type of connection bypasses the need to log in to an application, such as Mobile.
- **Client connection.** A client connection requires logging in to Mobile, before communication can begin between the GPS receiver and the server. The GPS receiver and the wireless modem might be separate products. If your unit has a client connection, then, depending on the privileges established by your SAA, the GPS receiver can be started, stopped, and the status checked from Mobile.
- **UNS Server Connection.** Motorola GPS devices (UNS devices) are also GPS receivers, but they use Motorola's UNS server to communicate with the AVL sever. After your SAA sets up the UNS device, the device can be used without logging into an application, such as Mobile. UNS devices can be used with or without a vehicle, such as if the assigned patrol is completed on foot.

Viewing the GPS status indicator

In Mobile, the GPS status indicator shows if the GPS signal from your AVL device is valid or invalid with the following colors:

- **Green.** Indicates your GPS signal is valid.

- **Red.** Indicates your GPS signal is invalid.
- **Gray.** Indicates your GPS is disabled.



Using the GPS receiver

For your AVL device's GPS receiver to calculate your position, the receiver must be in an area where the signal is not blocked.

The GPS receiver might not calculate your position if your receiver is located in:

- A parking garage
- A tunnel
- A canyon
- Around dense trees
- Around tall buildings

If the GPS receiver cannot calculate your position, then the unit or device icon remains in the same location on the map until the GPS receiver can receive GPS signals again.

Checking the status of the GPS receiver

If your AVL device uses a client connection, then the status of the GPS receiver can be checked from Mobile.

To check the status of the GPS receiver, select **File > GPS > Status**.

If the GPS receiver is operating properly, then the following GPS Status message is displayed:

`Started on port` *`X`*

where *X* is the name of the port to which the AVL device is connected.

If the GPS receiver is not operating properly, then the following message is displayed: `Not Started`.

If the receiver is not operating properly, then check the GPS connection. Contact your SAA for assistance.

Using AVL

The AVL module adds several features to the map in Mobile and CAD. The following sections describe each feature:

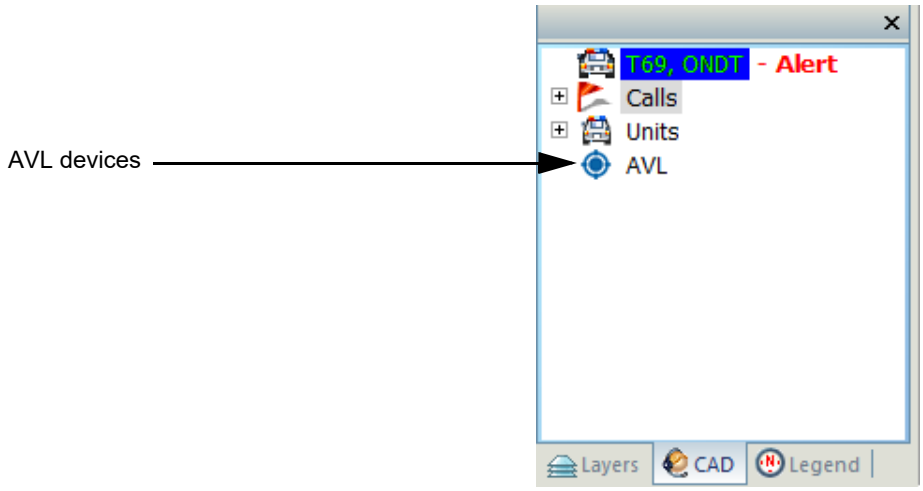
- "Viewing AVL devices" on page 16
- "Using the Follow My Unit feature" on page 19
- "Viewing AVL device information" on page 22
- "Viewing unit information" on page 24
- "Using AVL alerts" on page 25
- "Using CAD commands with AVL devices" on page 27

Viewing AVL devices

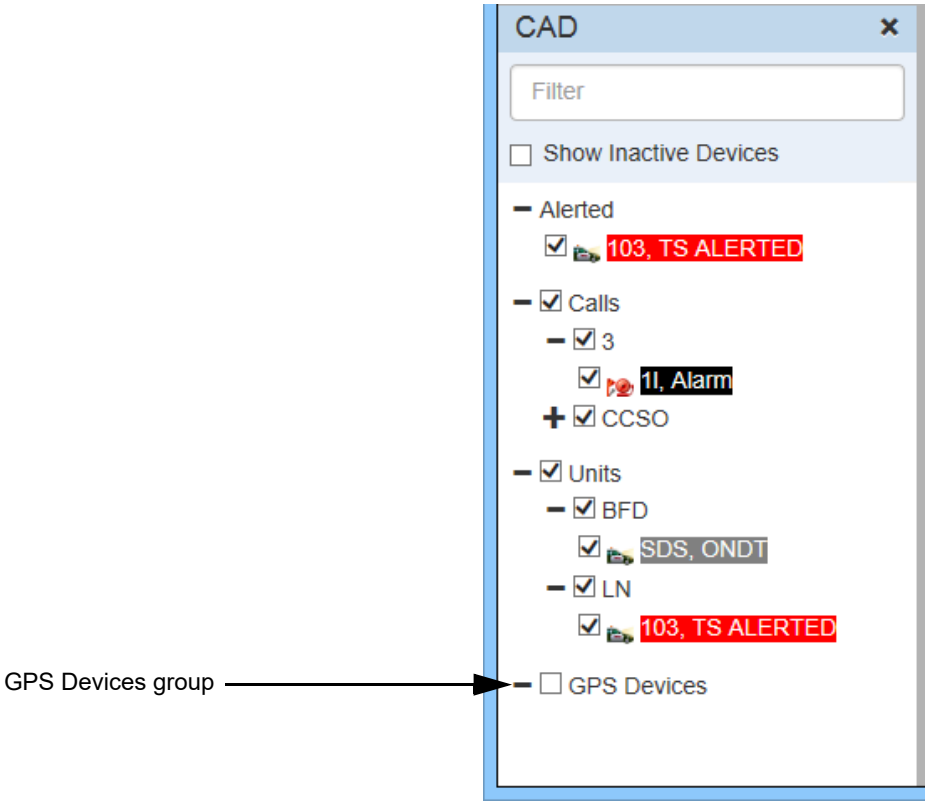
AVL devices can be viewed in the **Map** area of all map versions. The CAD maps offer additional viewing options.

> **NOTE**
>
> Units with a GPS device are also considered AVL devices. However, they are listed in the Units group for both CAD mapping modules.

- In the Classic CAD map, AVL devices, calls, and units are displayed in the **CAD** tab.



- In the CAD map, AVL devices, calls, and units are displayed in the **CAD** pane. AVL devices are listed in the GPS devices group.



Using the AVL device filter

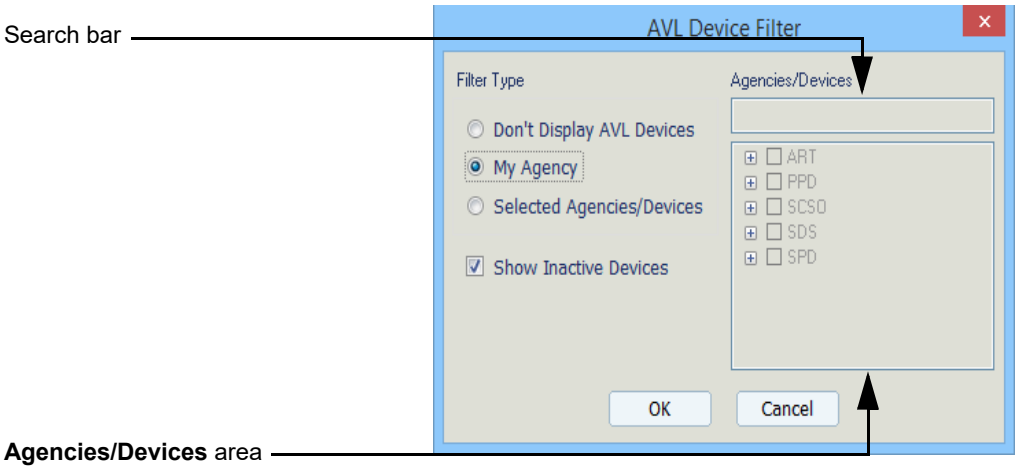
For the Mobile Mapping and Classic CAD Mapping modules, use the AVL device filter to show only the desired devices. Devices can be filtered by agency or by individual device. If your agency uses the CAD Mapping module, then devices are filtered using the **Filter** field in the **CAD** pane. For more information, see the *CAD User Manual*.

> **NOTE**
>
> Units are not affected by the AVL device filter. To show or hide units on the map, click the **Units** button. For more information, see the *CAD User Manual*.

To use the AVL device filter:

1. From the Mapping toolbar, click the **AVL Device Filter** button ( ).

The AVL Device Filter dialog box opens.



2. In the **Filter Type** area, select one of the following options:
   - **Don't Display AVL Devices**: Select this option to hide all AVL devices.
   - **My Agency**: Select this option to show only AVL devices associated with your agency.

> **NOTE**
>
> The **My Agency** option is available only in Mobile.

   - **Selected Agencies**: Select this option to show devices from selected agencies. From the **Agencies/Devices** area, select the desired agencies to show.
     - To show specific devices within an agency, click the **Expand** icon next to the desired agency name, and then select the desired devices to show. Devices are listed in descending order, either alphabetical or numerical, according to how the agency's devices are named.
     - To find a specific agency or AVL device on the list, from the search bar, enter the agency abbreviation or the device ID. The list narrows to display only the devices and agencies that match your search criteria. Select the desired devices.

     If all devices for an agency are selected, then an x displays in the agency's check box. If only some devices for an agency are selected, then the agency's check box is shaded. If no devices for the agency are selected, then the check box is blank.

3. To show inactive AVL devices, select the **Show Inactive Devices** check box.
4. Click **OK**.

To display or hide the AVL devices on the map, from the Mapping toolbar, click the **AVL Device** button ( ).

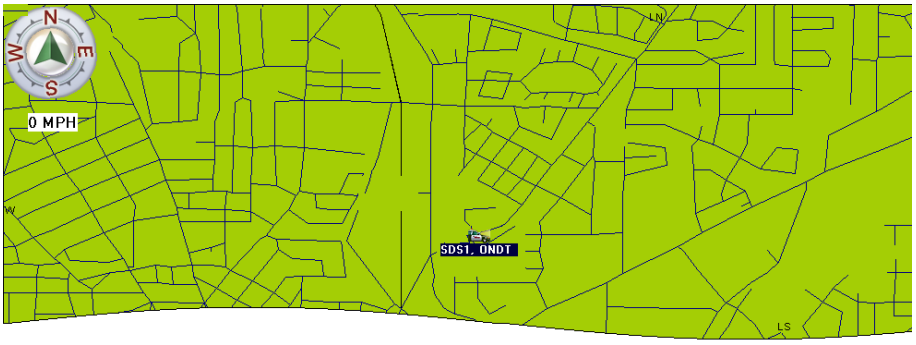
Using the Follow My Unit feature

The Follow My Unit feature can be used in the CAD map and the Mobile map, but in different ways.

In Mobile

In Mobile, the Follow My Unit feature can be used to center your unit or device on the map and follow its movement. The Follow My Unit feature is controlled by the **Auto Panning** button ( ), and is available if an AVL device is detected while the map is being used. If no AVL device is detected, then the **Auto Panning** button is disabled.

To enable the Follow My Unit feature, click the **Auto Panning** button. The map is centered on your unit or device, and a compass appears in the upper-left area of your map.



As your unit moves, the map is updated to show your most recent location. In addition, the compass displays the direction of movement. Depending on your settings, the map zooms to the extent that shows the full route. For more information, see "Setting auto-zoom options" on page 32.

> **NOTE**
>
> When using the Follow My Unit feature, press the Page Up or Page Down keys to zoom in or out on the map, instead of the Zoom In and Zoom Out commands. If the Zoom In and Zoom Out commands are used while in Follow My Unit mode, then the software stops following the unit. For more information on navigating the map, see the *Mobile User Manual*.
>
> For information on following a unit in CAD on the Classic map, see the *CAD User Manual*.

To disable the Follow My Unit feature, click the **Auto Panning** button again. The compass is removed from the map, and the map stops panning to following your location.

For more information, see "Turning on Auto Panning" on page 22.

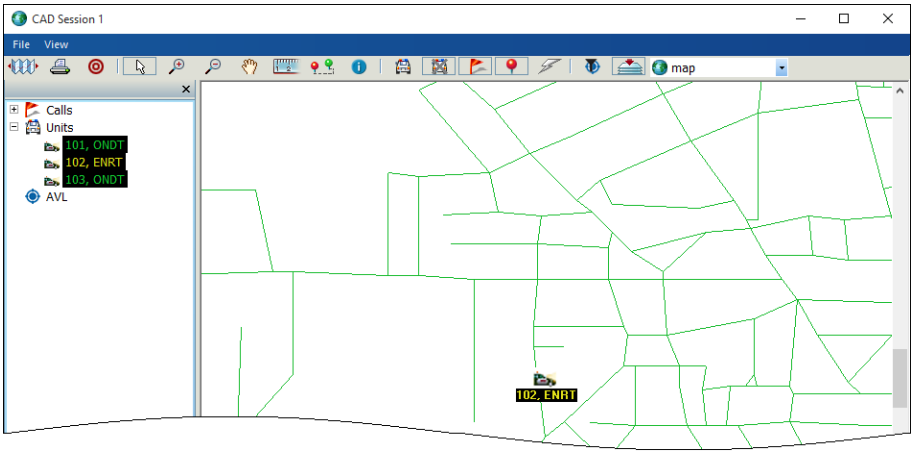
In CAD

In CAD, the Follow My Unit feature can be used to center the map on a selected unit or device and follow its movement. The zoom level for following a unit or device is set in Mobile.

To use the Follow My Unit feature, depending on your Mapping version, do one of the following:

- **Classic CAD Mapping.** From the **CAD** tab, right-click the desired unit or device, and then select **Follow**.

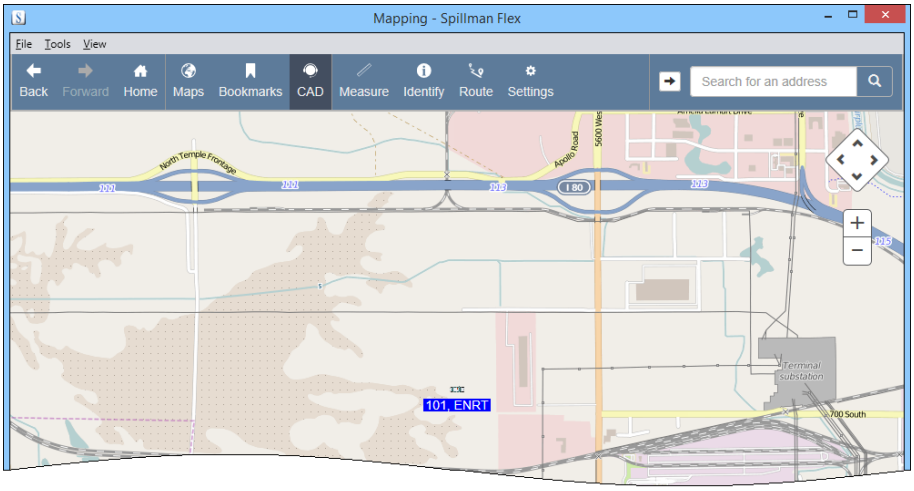
  The map centers on the selected unit or device and then pans continuously to follow any movement.



  When finished, from the **CAD** tab, right-click the unit or device, and then select **Stop Follow**.

- **CAD Mapping.** From either the **CAD** pane or the **Map** area, right-click the desired unit or device, and then select **Follow**.

  The map centers on the selected unit or device and then pans continuously to follow any movement.



  When finished, right-click the unit or device, and then select **Stop Following**.

Turning on Auto Panning

In Mobile, the Auto Panning command controls the Follow My Unit feature, and is used to keep your unit visible on the map.

With the Auto Panning command turned on, if your unit nears the edge of the screen, then the software repositions the screen so that your unit is again in the center of the map.

To turn the Auto Panning command on or off, use one of the following methods:

- Select **Mapping > Auto Panning**.
- Press Ctrl+N.
- Click the **Auto Panning** button ( ).

The level to which the map zooms while Auto Panning is enabled is set in the Options dialog box. For more information, see "Setting auto-zoom options" on page 32.

Viewing AVL device information

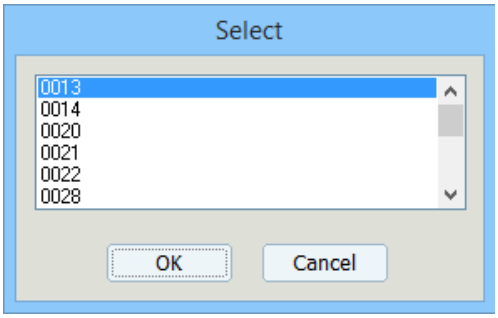
AVL device information, such as the connection type and device status can be viewed in any of the map versions.

To view AVL device information:

1. Based on your Mapping version, from the **CAD** pane, **CAD** tab, or **Map** area, do one of the following:
   - Right-click the device icon.
   - Right-click the unit icon.
   - Right-click the cluster icon in which the device or unit is included.

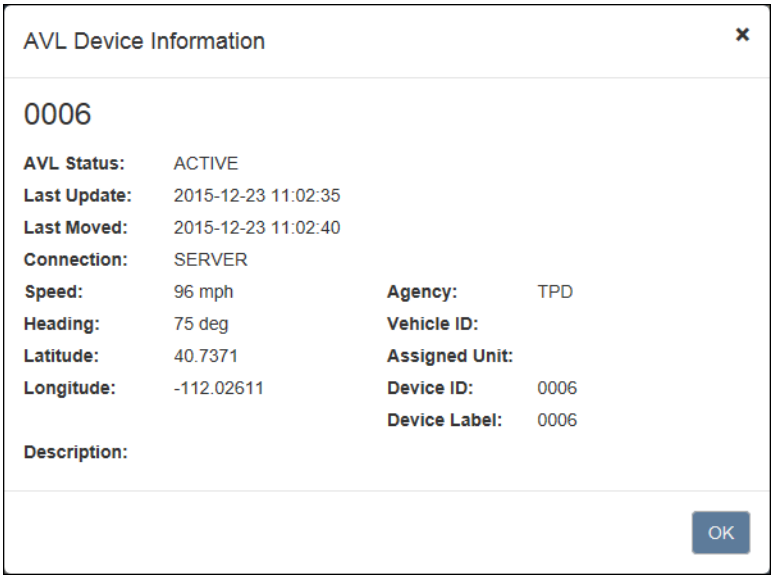
   A menu is displayed.
2. Select **AVL Information**.

If the AVL device or unit is part of a cluster, then the Select dialog box opens.



– Select the device label for the desired device or unit, and then click **OK**.

The AVL Device Information message box opens.



The AVL Device Information message box contains the following details about the AVL device or unit:

– The status, either **Active**, **Stale**, **Inactive**, or **Alerted**

– The date and time of the last update and last movement

– The connection type

– The speed of the last movement

– The heading of the last movement

- The current latitude
- The current longitude
- The agency
- The vehicle ID (if applicable)
- The assigned unit (if applicable)
- The device ID
- The device label
- The device description

NOTE

The status of the device is determined by how recently the AVL server has received an update from the device, using the following values:

- **Active**: The device is in use and reporting normally.
- **Stale**: The device is probably in use, but has not reported within the time set by your administrator.
- **Inactive**: The device might still be in use, but the device has not reported for longer than the time set by your administrator.
- **Alerted**: The device has been alerted by the officer, through the emergency button on the officer's radio, or in Mobile.

3. When finished, close the AVL Device Information message box.

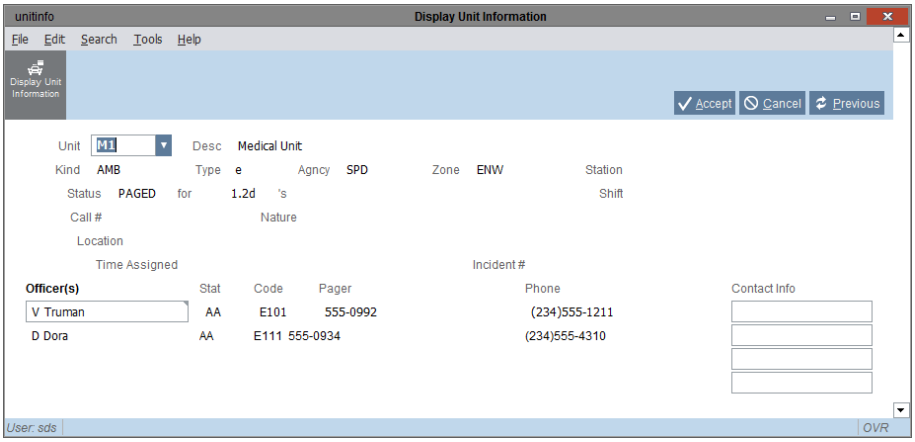
Viewing unit information

To view information about a unit, such as the officers assigned to the unit, open the Display Unit Information screen.

To open the Display Unit Information screen, depending on your Mapping version, do one of the following:

- For Classic CAD Mapping, from the **CAD** tab, right-click the desired unit, and then select **Open**.
- For CAD Mapping, from either the **CAD** pane or the **Map** area, right-click the desired unit, and then select **Unit Information**.

The Display Unit Information screen opens.



For more information about the Display Unit Information screen, see the *CAD User Manual*.

Using AVL alerts

If an officer is in danger, such as during a foot pursuit or high-speed vehicle chase, then the officer can send out an alert to others.

Units and devices can be alerted in the following ways:

- Sending an Emergency alert through Mobile. For information on sending alerts though Mobile, see the *Mobile User Manual*.
- Pressing the emergency button on a UNS device.

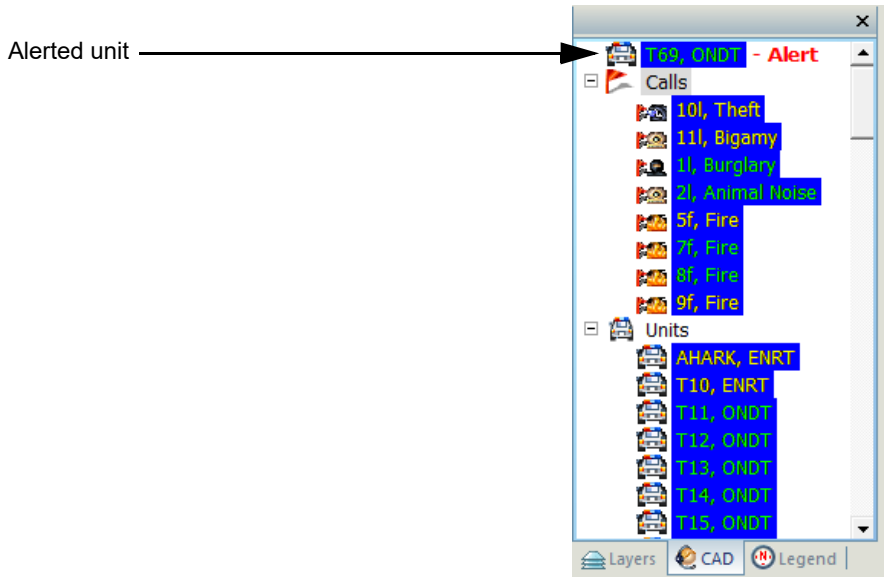
> **NOTE**
>
> When a unit or device is alerted, the frequency of update requests to your server for the unit or device is increased.

Mobile

In Mobile, an Emergency Alert message appears and is received in the Message Center. For more information, see the *Mobile User Manual*.

Classic CAD Mapping

If your agency uses the Classic CAD Mapping module, then the alerted device or unit is moved to the top of the **CAD** tab list. For more information on the **CAD** tab, see the *CAD User Manual*.

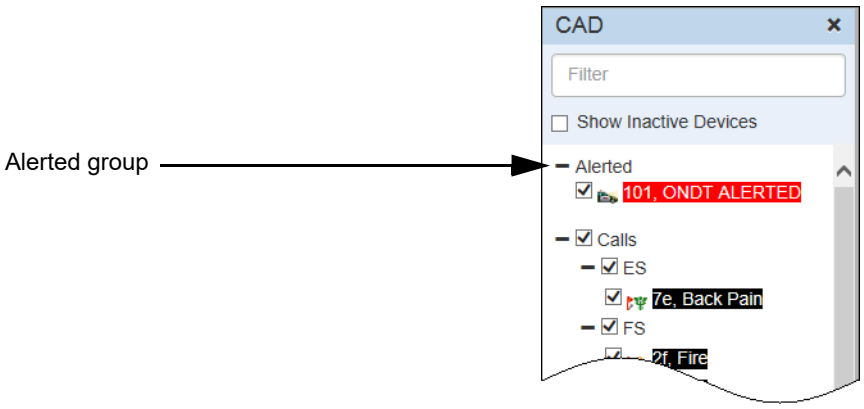


For alerted units and devices, the following occurs on the map:

- If the unit or device is in a cluster, then it is removed from the cluster and displayed on its own.
- The alerted device or unit is highlighted with a red box around the icon.
- The label of the alerted device or unit is changed to a red background with white text.
- The alerted device or unit flashes.

CAD Mapping

If your agency uses the CAD Mapping module, then in the **CAD** pane, the alerted device or unit is moved to the Alerted group.



For alerted units and devices, the following occurs on the map:

- The label of the alerted device or unit is changed to a red background with white text.
- The alerted device or unit flashes.

Dismissing AVL alerts

If privileges have been granted, then an AVL alert can be dismissed.

> **CAUTION**
>
> Dismissing an AVL alert removes the alert for *all* users. Do not dismiss the alert before verifying the danger has passed.

To dismiss an AVL alert, do any of the following:

- Based on your Mapping version, from the **CAD** pane or **CAD** tab, right-click the alerted device or unit, and then select **Disable Alert**.
- From either the CAD or Mobile map, right-click the device or unit icon, and then select **Disable Alert**.
- Use the CAD Clear Alert command. For information on using CAD mapping commands, see the *CAD User Manual*.

Using CAD commands with AVL devices

The following CAD commands can be used to filter AVL devices on the map and to assign a device to a unit:

- Zoom to device (`map zd.devicelabel`)

- Hide device (`map hd.devicelabel`)
- Reset AVL default display settings (`map dsd.devicelabel`)

For more information, see the *CAD User Manual*.

Using the UV command

The UV command is used to assign devices to units. For more information about the UV command, see the *CAD User Manual*.

To use the UV command:

1. At the command line, enter **uv**.

   A prompt opens, asking for the unit to assign.

2. Enter a unit name or number, and then click **OK** or press Enter.

   The AVL Device prompt opens, asking for the AVL device.

> **NOTE**
>
> If the designated unit cannot be found, then a Lookup list opens. Select the unit, and then click **OK** or press Enter to open the AVL Device prompt.

3. Enter the **Label** field value found in the AVL Device Information message box, and then click **OK** or press Enter. For more information, see "Viewing AVL device information" on page 22.

   The following message is displayed beneath the command line:

   `Assigned unit unitID to device devicelabel`

   where *`unitID`* is the ID for the unit being assigned a device and *`devicelabel`* is the **Label** field value for the desired device.

   If the unit already had a device assigned, then the previously assigned device is removed from the unit and the new device is assigned.

   If no confirmation is displayed, and the AVL Device prompt is blank, then the unit is not assigned an AVL device. To attempt assigning a different device, enter the **Label** field value for another device in the prompt, and then click **OK**.

Customizing AVL Settings

AVL settings can be customized in Mobile. Some settings affect both the CAD and Mobile maps. Any differences are noted.

From the Mapping menu, the following setting can be customized:

- "Selecting the units that appear on the map" on page 29

From the Options dialog box, the following settings can be customized:

- "Defining the appearance of unit and device markers" on page 30
- "Setting auto-zoom options" on page 32

Selecting the units that appear on the map

Units can be displayed on the map, and the category of units to display can be selected. These options are selected in the Mobile map, but affect both the CAD and Mobile maps.

> **NOTE**
>
> If your agency has the Mobile Voiceless CAD module, then the Mobile map and the **Units** area in the CAD Call Information screen display the same units. Therefore, by selecting the units for the Mobile map, the units for the CAD Call Information screen are also selected.

To select the units that appear on the map:

1. From the menu bar, select **Mapping** > **Unit Filters**.
2. Select the category of units to be displayed from the following options:
   - **My Zone's Units**: Shows only the units in your assigned zone.
   - **My District's Units**: Shows only units in your assigned district.
   - **My Agency's Units**: Shows only the units in your agency.
   - **Other Zone's Units**: Shows units in other selected zones. See "Using the Set Zone Filter" on page 30.
   - **Other Agency's Units**: Shows units in other selected agencies. See "Using the Set Agency Filter" on page 30.
   - **All Units**: Shows all units on your server.

   A check mark appears next to the current filter and the Mapping menu closes.

Using the Set Zone Filter

The Unit filter can be set to show units from other selected zones.

To view all the units in selected zones:

1. From the menu bar, select **Mapping** > **Unit Filters**.
2. Select **Other Zone's Units**.

   The Set Zone Filter dialog box opens.
3. Do one of the following:
   - To view one or more zones, select the desired zones, and then click **OK**.
   - To view all available zones, click **Select All**. All zones in the list are highlighted. Select any zone check box to select all the highlighted zones, and then click **OK**.

   The Set Zone Filter dialog box closes and the filter is applied to the map.

Using the Set Agency Filter

The Unit filter can be set to show units from other selected agencies.

To view all the units in selected zones, do the following:

1. From the menu bar, select **Mapping > Unit Filters**.
2. Select **Other Agency's Units**.

   The Set Agency Filter dialog box opens.
3. Do one of the following:
   - To view one or more agencies, select the desired agencies, and then click **OK**.
   - To view all available agencies, click **Select All**. All agencies in the list are highlighted. Select any agency check box to select all the highlighted agencies, and then click **OK**.

   The Set Agency Filter dialog box closes and the filter is applied to the map.

Defining the appearance of unit and device markers

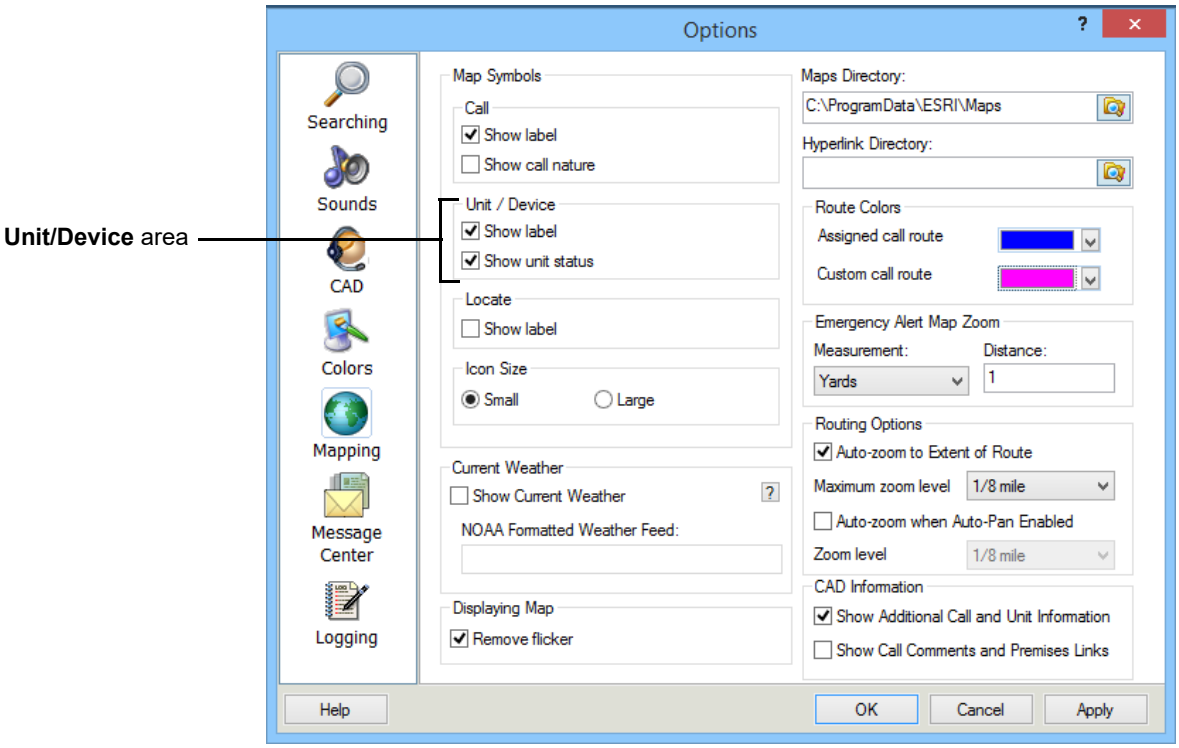
The appearance of the unit and device markers can be defined by selecting the size of the unit and device marker icons. For Mobile, the information that is included with each marker can also be defined.

Defining markers for Mobile

To define unit and device markers in Mobile:

1. Select **File** > **Options** > **Mapping**.

   The Options dialog box opens to the **Mapping** tab.



2. In the **Unit/Device** area, the **Show label** check box and the **Show unit status** check box are selected by default. Do one of the following:
   - To show both the unit or device label and the unit or device status, leave both check boxes selected.
   - To show only the unit or device label, clear the **Show unit status** check box.
   - To show only the unit or device symbol on the map, clear the **Show label** check box. All options in the **Unit Label** area become unavailable.
3. In the **Icon Size** area, select the size of the marker icon.
4. Click **OK**.

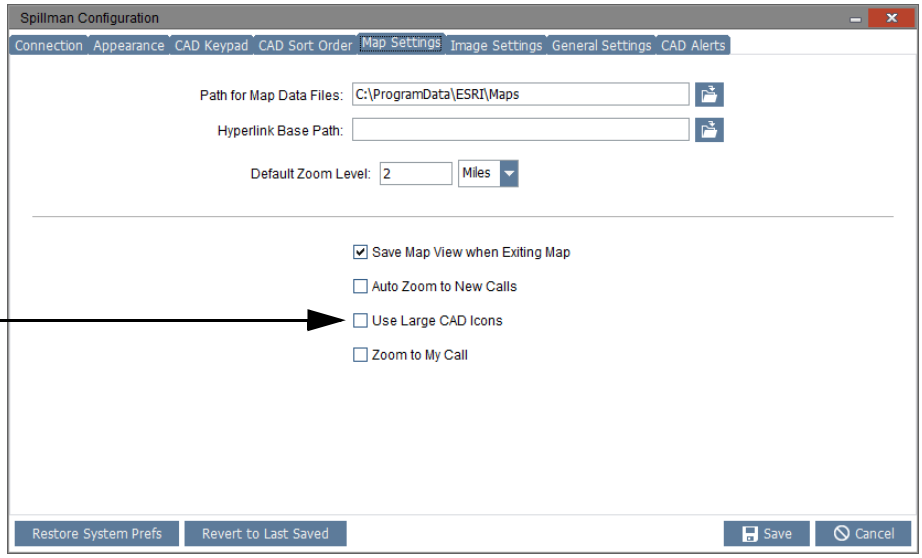
Defining markers for CAD

To define unit and device markers in CAD:

1. Select **File > Configure**.

   The Configuration screen opens.

2. Select the **Map Settings** tab.



Use Large CAD Icons check box

3. Select the **Use Large CAD Icons** check box.
4. Click **Save**.

   Your settings are applied to the CAD map.

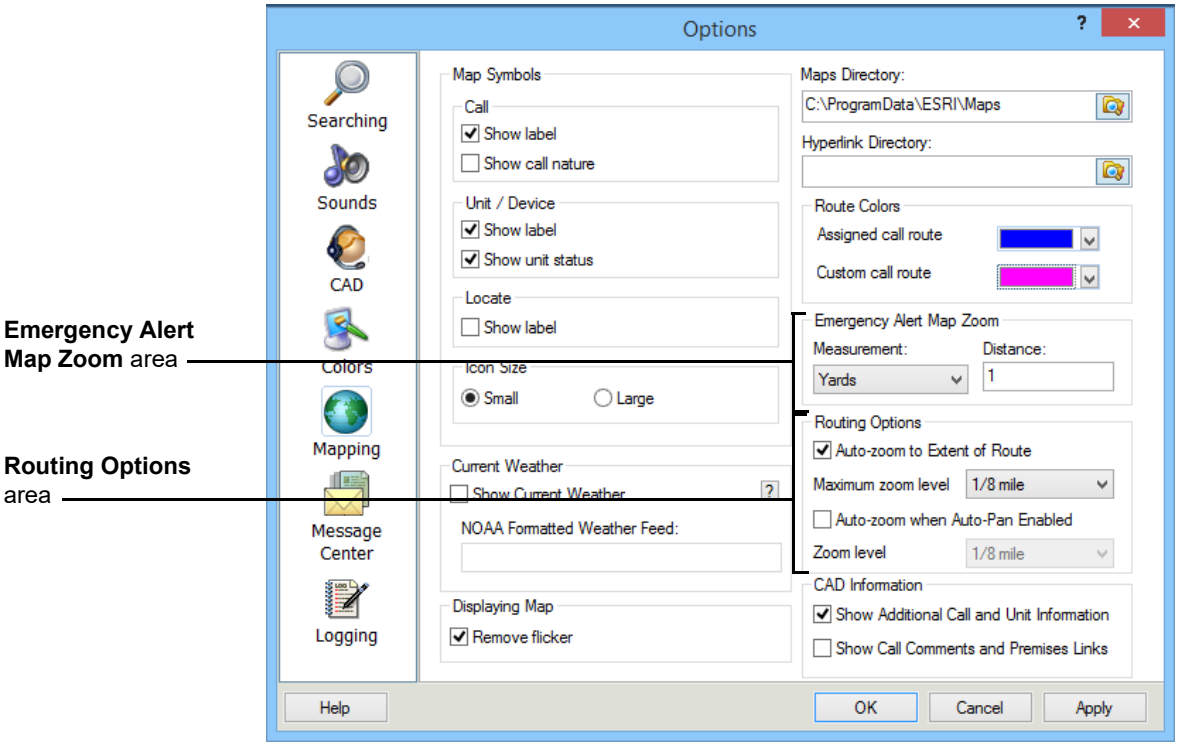
Setting auto-zoom options

When certain actions occur on the map, the auto-zoom features move the view of the map to the affected unit or device:

To set auto-zoom options:

1. From the Mobile menu bar, select **File** > **Options** > **Mapping**.

The Options dialog box opens to the **Mapping** tab.



2. To set the level to which the map zooms when a unit or device is alerted, in the **Emergency Alert Map Zoom** area, complete the following fields:
   - **Measurement**: Select the unit of measurement to use from the drop-down list.
   - **Distance**: Enter the distance to zoom in.
3. To set auto-zoom options for routing features, in the **Routing Options** area, complete the following fields:
   - **Auto-zoom to Extent of Route**: Select this check box to continually zoom in as the unit or device approaches the route destination.
   - **Maximum zoom level**: Select from the drop-down list the maximum level the map will zoom as a route's end point is reached. This field is enabled only when the **Auto-zoom to Extent of Route** check box is selected.
   - **Auto-zoom when Auto-Pan Enabled**: Select this check box to continually zoom to a pre-set level when auto-panning is enabled.

– **Zoom level**: Select from the drop-down list the level the map will zoom when auto-panning is enabled. This field is enabled only when the **Auto-zoom when Auto-Pan Enabled** check box is selected.

NOTE

For more information on the **Routing Options** area, see the *Quickest Route Manual*.

4. Click **OK**.

Chapter 2

Administrator Information

Jump to topic:

Introduction 36
Setting Up System Privileges and Module Settings 38
Setting Up AVL Connections 40
Using the AVL Manager Web Application 46
Viewing AVL Log Records 61

Introduction

The Automatic Vehicle Location (AVL) module is used to track the location of officers, vehicles, and units through GPS, which allows your agency to more efficiently dispatch units.

The AVL module uses latitude and longitude coordinates to display the location of units and devices on the map. If your agency has set up the Recommended Units (`recunit`) table and maintains a geobase, then the coordinates can be used to recommend units based on their current location when a CAD call is dispatched.

> **NOTE**
>
> When a device remains stationary for some time, it can experience GPS drift, which can cause several different points to be recorded near the same spot with a speed of 0, indicating the device was not moving. GPS drift is a normal occurrence and does not mean your system is malfunctioning.
>
> For accuracy and signal strength, it is strongly recommended to use an external antenna with all GPS devices. For GPS devices in vehicles, the antenna should be mounted on the roof or windshield to ensure clear signal to the sky.

This chapter is written for administrators on how to set up and maintain the AVL module and UNS interface for all map versions.

> **NOTE**
>
> To use AVL, additional Mobile settings must be set up in the `options.xml` file. For more information, see the *Mobile Administrator Manual*.

Determining if your device is compatible

The AVL module is compatible with many Global Positioning System (GPS) and Global Navigation Satellite System (GLONASS) devices that are capable of outputting data in the NMEA 2.0 standard that is compatible to Mobile.

To help determine if your device is compatible, verify that the following Recommended Minimum Criteria (RMC) sentence is supported.

GPS devices

```
$GPRMC,170520,5,V,4223,24585,N,07100,98735,W,,,031103,,,
N*6A
```

GLONASS devices

```
$GNRMC,170520,5,V,4223,24585,N,07100,98735,W,,,031103,,,
N*6A
```

However, even if the device supports this sentence, it still might not be compatible with Mobile. Some devices create virtual serial ports that are not compatible.

If there are any issues using a non-certified NMEA device, then the device must be sent to Spillman for testing and certification. This test and certification is charged on a time and materials basis.

> **NOTE**
>
> For a list of compatible devices and how to set them up, see the *Automatic Vehicle Location Module Technical Product Description* (TPD). Contact Spillman Technical Services or your Client Services representative for the current TPD.

Types of AVL connections

The following types of AVL connections can transmit information to your agency's server.

Client connection

A client connection allows the GPS receiver to communicate indirectly with the server. Client connections rely on Mobile to communicate with the server, so information is sent only after an officer logs on to Mobile. The officer can start, stop, or check the status of the GPS receiver from Mobile. Client connections use a a GPS device that is connected to the laptop through a USB or Serial cable. For setup information, see "Setting up a client connection" on page 40.

Server connection

A server connection allows the GPS receiver to communicate directly with the server. Server connections use a wireless modem with an integrated GPS receiver. Information is sent to the server when the modem is turned on, without the need to log on to Mobile. For setup information, see "Setting up a server connection" on page 45.

UNS connection

Motorola's Unified Network Service (UNS) server allows third-parties, such as Spillman, to receive location information from compatible devices. If your agency has the Motorola UNS server and the UNS interface, then map can be set up to display the location of Motorola devices that report through UNS. For setup information, see "Setting up a UNS connection" on page 45.

Setting Up System Privileges and Module Settings

To use the AVL module, system privileges and module settings must be set up in the Administration Manager (`adminutil`).

Setting up system privileges

To use the AVL module, the following system privileges need to be set up in the Administration Manager (`adminutil`). For information on setting up system privileges, see the *Security Setup and Maintenance Manual*.

System Privilege	Description	Privilege
`mdcadmavl`	Allows the user to view the GPS options (**File** menu > **GPS**) in the Mobile client. To use the GPS options, the `mdcmdlavl` privilege must be given.	Access
`mdcmdlavl`	Enables the local AVL service and allows the user to access GPS options (**File** menu > **GPS**) in the Mobile client. The GPS options allow the user to enable or disable GPS reporting, check the status of the GPS receiver, configure the GPS device, and use TAIP commands to communicate with the device.	Access
`mdcadmconnect`	Allows the user to access the Connection Settings dialog box, where users can change their client ID, vehicle ID, and unit.	Access
`mdcadmalerts`	Allows users to modify, dismiss, and set expiration times for ATL, BOLO, and Emergency alerts sent by other users. For general users to send ATL, BOLO, and Emergency alerts, no special privileges are required. This privilege affects any alert in the Message Center, on the Mobile map, or on the CAD map.	Access, Add, Modify **CAUTION**: Dismissing the alert affects *all* users. Therefore, it is recommended to give the privilege of dismissing alerts to a few select individuals who have the information required to judge when the alert should be dismissed.

Setting up module settings

To use the AVL module, the following module settings must be set up in the Administration Manager (`adminutil`), in the **Module.Mapping** folder. For information on setting up module settings, see the *Application Setup and Maintenance Manual*.

Setting	Description	Value
`hideAlertNoLocation`	Determines whether alerted AVL devices without correct GPS coordinates should be shown on the map. • Set to **`True`** to hide alerted devices with invalid GPS coordinates from the map.The devices are still visible in the **CAD** tab. • Set to **`False`** to show alerted devices with invalid GPS coordinates on the map. By default, the setting is set to `False`. Alerts for hidden devices can be cleared from the **CAD** tab, or by using the Clear Alert command.	`True`/`False`
`serverAVLEnableDirections`	Determines whether Quickest Route directions are available when a server AVL connection is used. This setting applies to the Mobile map only. • Set to **`True`** to enable Quickest Route directions. • Set to **`False`** to not enable Quickest Route directions. By default, the value is `False`.	`True`/`False`

Setting Up AVL Connections

The AVL connection setup depends on the type of connection your agency uses. Your agency can use devices with different connection types, which are all connected to your AVL server.

Setting up a client connection

To set up a client connection, the following tasks must be completed:

- Install and run Mobile on the vehicle's laptop computer. For more information, see the *Mobile Administrator Manual*.
- Enable the GPS receiver. See "Enabling the GPS receiver" on page 40.

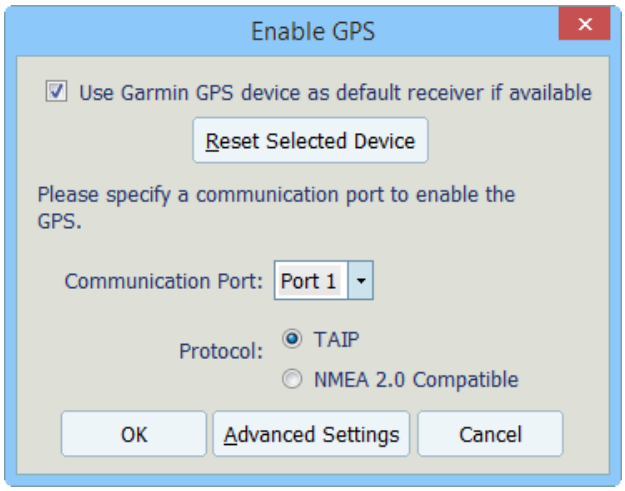
  If your agency uses Garmin GPS 18x OEM devices, see "Using a Garmin GPS 18x OEM device" on page 42.

Enabling the GPS receiver

To enable the GPS receiver:

1. In Mobile, select **File** menu > **GPS** > **Enable**.

   The Enable GPS dialog box opens.



2. In the **Communication Port** field, select the communication port from the drop-down list.

3. In the **Protocol** area, select the GPS protocol the device uses.

> **NOTE**
>
> If the NMEA 2.0 protocol is selected, then the baud rate needs to be set the first time Mobile is logged in to.
>
> To set the baud rate:
>
> 1. In the Enable GPS dialog box, click **Advanced Settings** to open the GPS Advanced Settings dialog box.
> 2. In the **Baud Rate** field, click the drop-down arrow and select **4800**.
> 3. Click **OK**.

4. Click **OK**.

   One of the following occurs:

   – If the GPS receiver is operating, then the Mapping screen opens.

   – If the GPS receiver is not operating, then a message prompts to retry or cancel the connection. To try the connection again, click **Retry**. To cancel the operation, click **Cancel**.

     If Mobile does not connect to the GPS receiver, then check the following items:

     – Ensure the communication port is correct. To change the communication port, repeat steps 2–3.

     – Ensure the GPS receiver has power.

     – Ensure the GPS receiver is correctly connected to the laptop computer.

     – Ensure the settings for the communication port are correct. See "Changing the communication port settings" on page 41.

Changing the communication port settings

For the GPS receiver to operate, the communication port settings in Mobile must be the same as the settings used by the GPS receiver.

> **CAUTION**
>
> Change the communication port settings in Mobile *only* if the settings used by the GPS receiver are known.

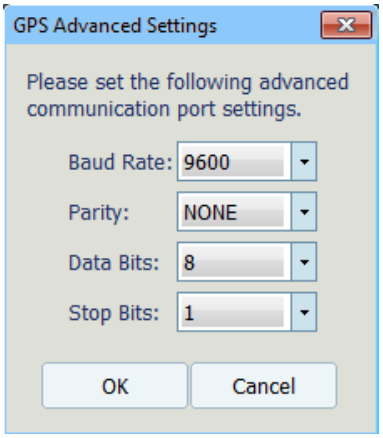
To change the communication port settings in Mobile:

1. In Mobile, select **File** menu > **GPS** > **Enable**.

   The Enable GPS dialog box opens.

2. Click **Advanced Settings**.

   The GPS Advanced Settings dialog box opens.



3. Select the settings for the communication port, and then click **OK** to return to the Enable GPS dialog box.
4. To start the GPS receiver, select the communication port, and then click **OK**.

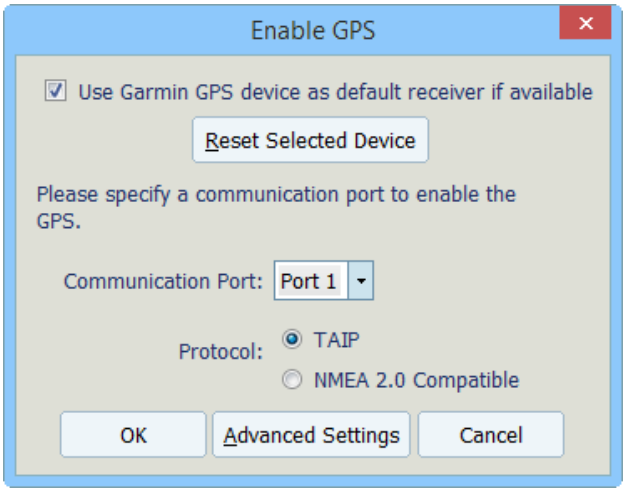
Using a Garmin GPS 18x OEM device

The Garmin GPS 18x OEM device automatically starts each time a user logs in to Mobile, without the need to configure the device. It is recommended to use the USB version of the Garmin GPS 18x OEM device.

To set up the Garmin GPS 18x OEM device:

1. Install the drivers for the device on the laptop computer, and then plug the Garmin GPS 18x OEM device into the computer.
2. In Mobile, select **File** > **GPS** > **Enable**.

The Enable GPS dialog box opens.



3. Ensure the **Use Garmin GPS device as default receiver if available** check box is selected. By default, this option is selected.
4. Click **OK.**

   The Garmin GPS 18x OEM device starts transmitting data.

Selecting a default Garmin GPS device

If a vehicle has more than one Garmin GPS 18x OEM device installed, such as one for Mobile and one for a license plate scanner, then a default Garmin GPS 18x OEM device must be selected to connect with Mobile.

To select a default Garmin device:

1. In Mobile, select **File** > **GPS** > **Enable**.

   If more than one Garmin GPS 18x OEM device is detected, then the Select GPS Device dialog box opens, prompting selection of one of the devices as the default device.

2. Select the appropriate device from the drop-down list, and then click **OK**.

Mobile will connect with the selected device each time a user logs in to Mobile, unless the device cannot be located, or the **Reset Selected Device** button in the Enable GPS dialog box is clicked.

3. To remove a default Garmin GPS 18x OEM device, from the Enable GPS dialog box, click **Reset Selected Device**.

   The following message is displayed: `Selected Garmin device has been reset.`

Turning off automatic connections

If a different device in a vehicle, such as a license plate scanner, needs to connect to a Garmin GPS 18x OEM device, then Mobile must be prevented from automatically connecting with the Garmin device.

To turn off the automatic connection to a Garmin device:

1. In Mobile, select **File** > **GPS** > **Disable** to disable the current connection.
2. Select **File** > **GPS** > **Console** to open the Enable GPS dialog box.
3. Clear the **Use Garmin GPS device as default receiver if available** check box.

   Mobile will not automatically connect with the Garmin GPS 18x OEM device.

Garmin Reporting Rules

The Garmin GPS 18x OEM device follows specific rules for how and when it sends updates, and has specific accuracy settings. If the device is working incorrectly, make sure the following rules are taken into account.

- **Distance.** If the current position of the GPS device is less than 10 feet from the last position, then no updates are sent. The device still communicates with the server, but the map is not updated.
- **Timing.** If the unit has moved more than 10 feet, and the time frame specified by your agency has passed since the last update, then the device's position is sent to the server.

  In an effort to conserve bandwidth, Mobile gives your agency the ability to control how often GPS updates are sent. Agencies set the

frequency of updates (in seconds) in the AVL Manager. See "Using the AVL Manager Web Application" on page 46.

> **NOTE**
>
> The Mobile client contains a message queue, as does the server. When a vehicle is moving, the updates to the server are generally spaced apart by the number of seconds specified by your agency. However, due to client and server queuing, the updates are not exactly the same number of seconds apart each time. For more information, see the *Mobile Administrator Manual*.

- **Accuracy.** The following table lists accuracy specifications for the Garmin GPS 18x OEM device.

Accuracy Type	Position	Velocity
Standard GPS	<15 meters, 95% typical	0.1 knots RMS steady state
DGPS (WAAS)	<3 meters, 95% typical	0.1 knot RMS steady state

Setting up a server connection

To set up a server connection, the following tasks must be completed:

- Follow the manufacturer's instructions to set up the device.
- Set up the required settings in the AVL Manager web application. See "Using the AVL Manager Web Application" on page 46.
- Configure the device to connect with the AVL Manager through the correct IP or host name of the server, and change the port on the device to match the port specified in the **AVL Server Port** field on the **AVL Properties** tab of the AVL Manager.

Setting up a UNS connection

UNS is a Motorola server that allows third-party applications, such as Flex, to communicate with Motorola GPS devices, such as radios.

To set up a UNS connection, complete the following tasks:

- Follow Motorola's instructions to set up the UNS server and the devices.
- Set up the required settings in the AVL Manager web application. See "Using the AVL Manager Web Application" on page 46.

Using the AVL Manager Web Application

Use the AVL Manager web application to set up and manage the AVL module, including server property settings, agency configurations, and connections for server devices and UNS devices. All devices can be viewed and managed through the AVL Manager web application. However, client device connections are set up through Mobile. For more information, see "Setting up a client connection" on page 40.

To set up device connections and agency configurations, the following tasks must be completed in the order given:

- Configure the AVL server properties and, if your agency has UNS devices, UNS server properties. See "Using the Properties tab" on page 47.
- Add icons. See "Using the AVL Icons tab" on page 49.
- Set up defaults for your agency. See "Using the AVL Agency Manager tab" on page 50.
- Set up individual devices. See "Using the AVL Manager tab" on page 53.

Accessing the AVL Manager

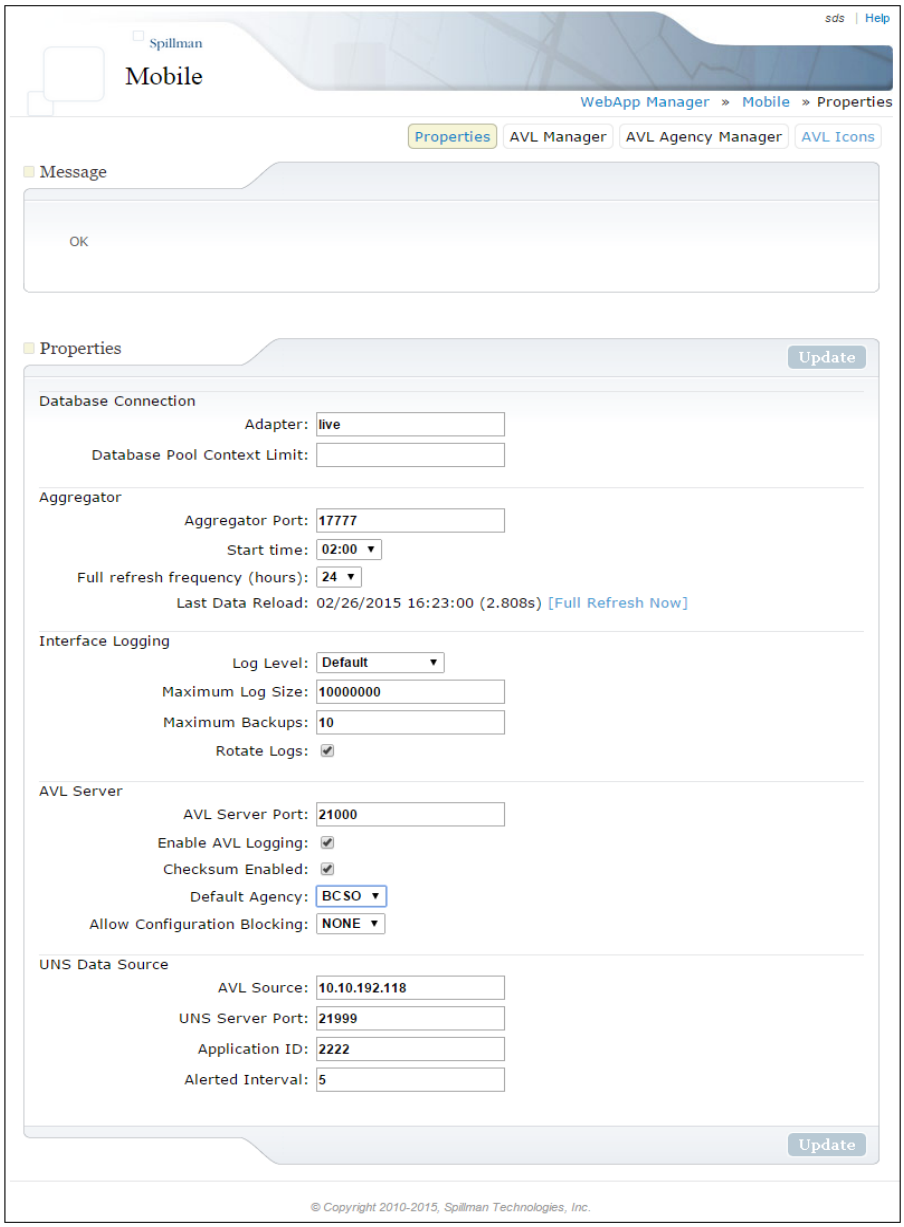
To access the AVL Manager:

1. Log on to the Application Server. For more information, see the *Application Setup and Maintenance Manual*.

   The Application Server screen opens.

2. Click the **Mobile** icon.

The Mobile screen opens to the **Properties** tab.



Using the Properties tab

Use the **Properties** tab to configure properties for the AVL server and, if your agency has UNS devices, the UNS server.

Only the **AVL Server** and **UNS Data Source** areas are used to configure AVL settings. All other areas are used for other Mobile applications and do not need to be configured. For more information, see the *Mobile Administrator Manual*.

See the following sections to configure AVL or UNS settings:

- "Configuring AVL server properties" on page 48
- "Configuring UNS server properties" on page 48

Configuring AVL server properties

To configure properties for the AVL server:

1. In the **AVL Server** area, complete the following fields:
   - **AVL Server Port**: Enter the UDP port that the server should listen for server AVL devices on. The default value is `21000`.
   - **Enable AVL Logging check box**: To enable logging on the AVL Log table (`rlavllog`), select the check box. To disable logging, clear the check box. By default, the check box is selected.
   - **Checksum Enabled check box**: To enforce checking the checksum data from server AVL devices, select the check box. By default, the check box is selected, and should be cleared only if your devices do not use the checksum functionality. Such instances are rare.
   - **Default Agency**: Select an agency from the drop-down list to be the default agency to associate new devices with. If an agency is not selected as the default, then when a new device is added, the first agency the software finds will be used.

> **NOTE**
>
> If your agency is using only UNS devices, then only the **Enable AVL Logging** check box and the **Default Agency** field need to be completed. For agencies using server connection devices, all fields need to be completed.

2. Click **Update** to save any changes.

Configuring UNS server properties

To configure UNS server properties:

1. In the **UNS Data Source** area, complete the following fields:
   - **AVL Source**: Enter the IP address of the UNS server.
   - **UNS Server Port**: Enter the port of the UNS server.

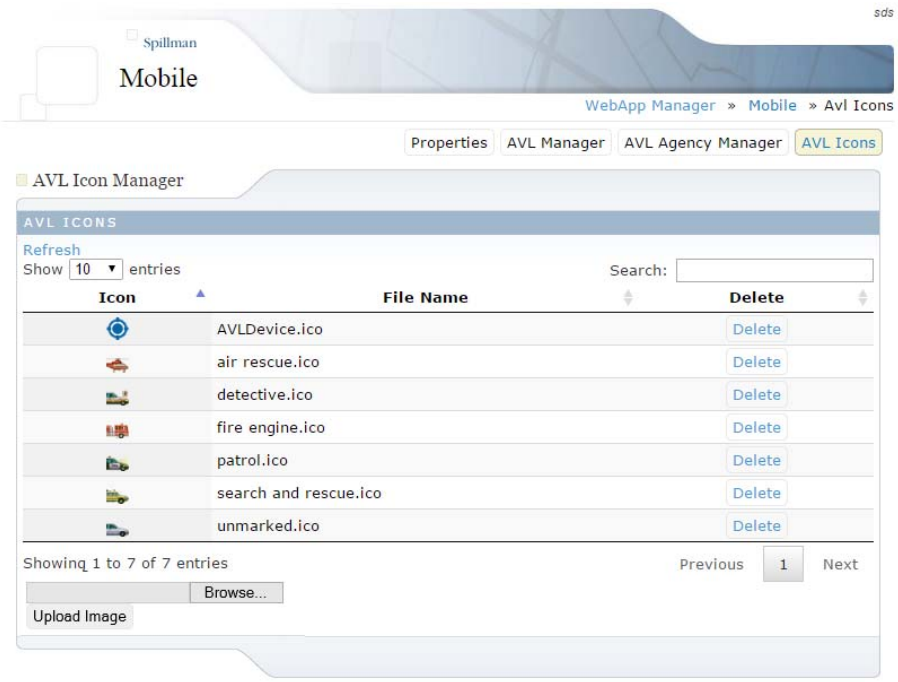
– **Application ID**: Enter the Motorola ID authentication code received from Motorola.

– **Alerted Interval**: Enter the time, in seconds, that the server request the location of the device when it is alerted by the officer. The default time is five seconds.

2. Click **Update** to save any changes.

Using the AVL Icons tab

Use the **AVL Icons** tab to manage the AVL device icons. Multiple icons can be added, which can be either agency-specific or unit-specific, and must be uploaded before setting up agency defaults. Only icon files in the Ico file format (`.ico`) are compatible with the AVL Manager.



To add an AVL icon:

1. From the **AVL Icons** tab, click **Browse**.

   The Choose File to Upload dialog box opens.

2. Select the file to use, and then click **Open**.

   The file name appears next to the **Browse** button.

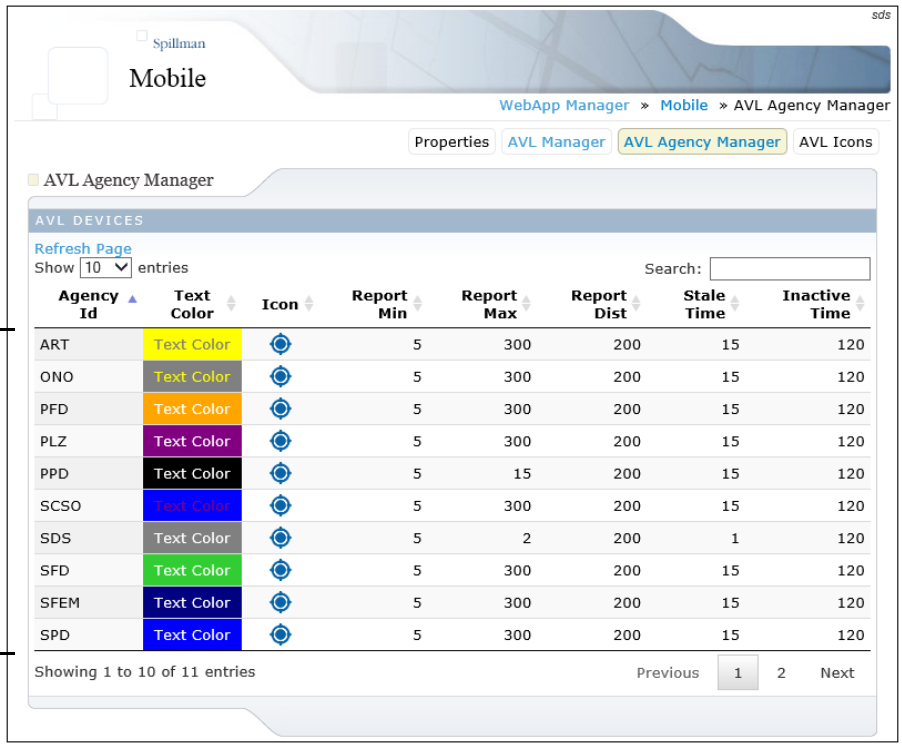
3. Click the **Upload Image** button.

The file is uploaded to the manager and displays in the list of icons.

4. Do any of the following, if necessary:
   - To delete an icon in the list, click the **Delete** button located next to the file name.
   - To sort the list of icons, click the arrows in the column header.
   - To search the list, in the **Search** field, enter any part of the file name. The list narrows to display only those icons that match the search criteria.

Using the AVL Agency Manager tab

Use the **AVL Agency Manager** tab to edit default configurations of devices associated with specific agencies. By default, individual devices use the configuration of their assigned agency.



Agency List area

The agency names listed on the screen are based on the entries in the Agency Codes table (apagncy). To add or remove an agency, use the Agency Codes table (apagncy). For more information, see the *Code Table Setup and Maintenance Manual*.

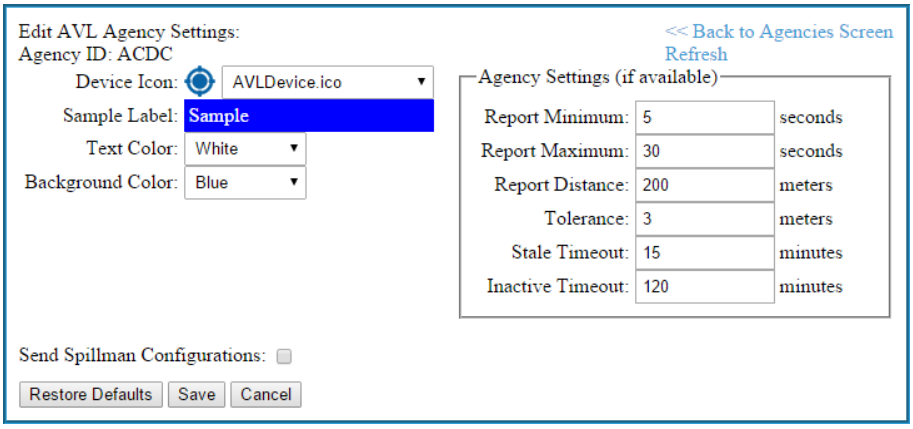
> **NOTE**
>
> Although all agencies from the Agency Codes table (apagncy) are listed, only those that use AVL need to be configured.

To search for a configuration, in the **Search** field, enter all or part of any value listed in a column.

To manage an agency configuration:

1. From the **Agency List** area, select an agency.

   The Edit AVL Agency Settings dialog box opens.



   The **Agency ID** field displays the agency name.

2. In the **Device Icon** field, select an icon to display on the map for the agency's devices. For more information about adding icons, see "Using the AVL Icons tab" on page 49.

3. The **Sample Label** field displays a preview of the label that is displayed under the icon on the map. To change the label settings, do the following:

   – In the **Text Color** field, select a color for the text of the label.

   – In the **Background Color** field, select a color for the background of the label.

   If the Custom option is selected for either field, then a second field appears. Enter a Hex code in the following format:

#RRGGBB

where *RR* is the red value, *GG* is the green value, and *BB* is the blue value.

NOTE

Flex uses a red background with white text to indicate devices with an alerted status. Therefore, red is not an option for the normal background color of an agency or device. For more information, see "Using AVL alerts" on page 25.

4. In the **Agency Settings** area, complete the following fields:
   - **Report Minimum**: Enter the minimum amount of time, in seconds, that the agency's devices should wait between reports. The default value is `5`.
   - **Report Maximum**: Enter the maximum amount of time, in seconds, that the agency's devices should wait between reports. The default value is `300`.
   - **Report Distance**: Enter the minimum distance, in meters, that the agency's devices must move for a report to send. The default value is `200`.
   - **Tolerance**: Enter the minimum distance, in meters, that the agency's devices must move for the software to count that movement as movement and not as GPS drift. The default value is `3`.
   - **Stale Timeout**: Enter the time, in minutes, that the server should wait for the agency's devices to respond before the devices are labeled as stale. The value entered cannot be zero. The default value is `15`.
   - **Inactive Timeout**: Enter the time, in minutes, that the server should wait after the agency's devices have stopped responding before the devices are labeled as inactive. The default value is `120`.

NOTE

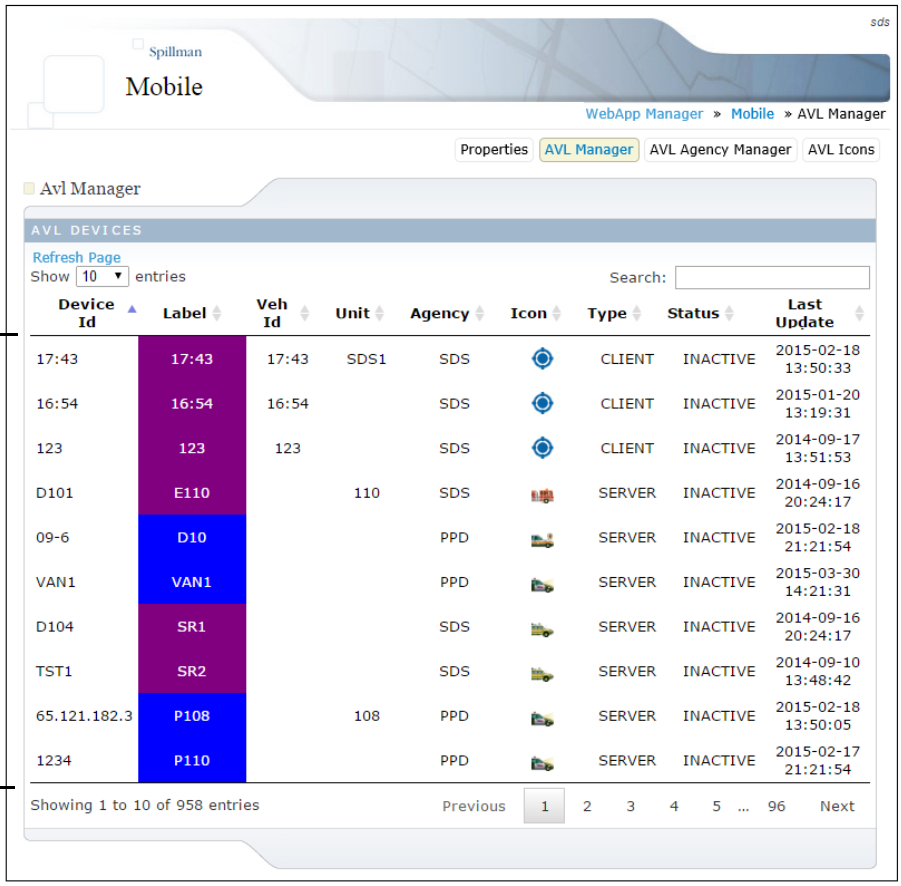
Some GPS devices do not allow remote configuration through the server and must be configured individually. If your agency only uses devices that do not allow remote configuration, then the **Report Minimum**, **Report Maximum**, and **Report Distance** fields do not need to be completed.

The **Tolerance** and **Inactive Timeout** fields determine how devices are displayed on the map and should be completed, even if none of your agency's devices allow remote configuration.

5. To save the configuration, click **Save**. Otherwise, click **Cancel**.
6. Do any of the following, if necessary:
   - To restore the settings to the defaults, click **Restore Defaults**.
   - To return to the **AVL Agency Manager** tab, click the **Back to Agencies Screen** link.
   - To refresh the dialog box, click the **Refresh** link. The page displays the current settings in the fields. Any unsaved changes to the fields are lost.

Using the AVL Manager tab

Use the **AVL Manger** tab to manage individual devices.



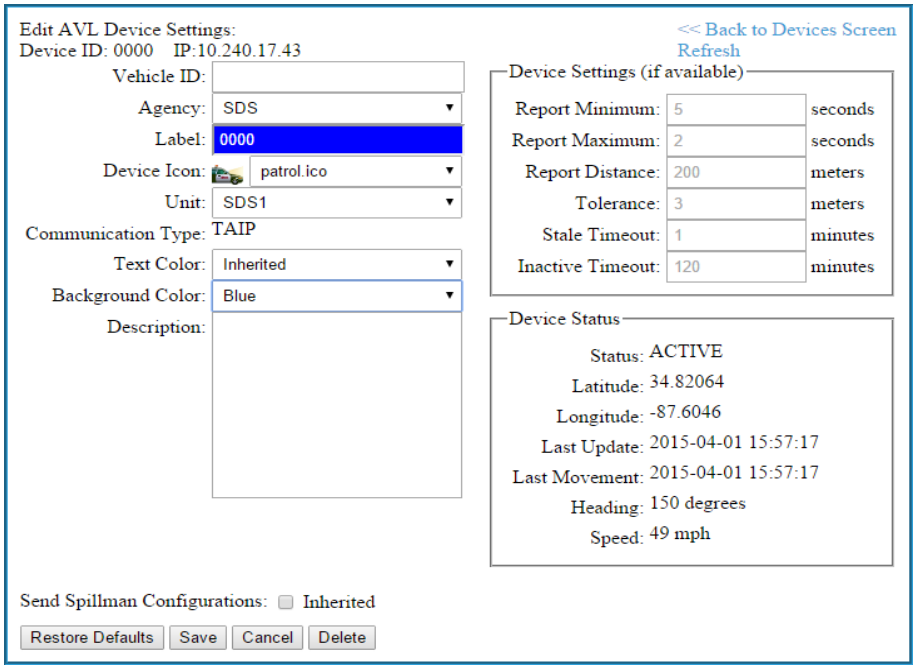
The devices listed on the screen are those devices that are communicating with the AVL server. To add a device, follow the manufacturer's instructions to set up the device to communicate with the AVL server. Devices are connected to the AVL manager automatically after the device is set up to communicate with the server.

To sort the list by the column type, click the arrow in the column header. To search for a specific device, use the **Search** field. Data from any text column in the **AVL Manager** tab can be used to search. For example, enter the agency or device ID.

To manage settings for a device:

1. From the **Device List** area, click the row for a device. If necessary, use the **Search** field to find a specific device.

   The Edit AVL Device Setting dialog box opens to display the current settings and status of the device.



2. Modify the fields as needed, and then click **Save**. For field descriptions, see "Fields on the AVL Device Setting dialog box" on page 55.
3. Do any of the following, if necessary:
   - To restore the agency defaults, click **Restore Defaults**.
   - To remove the device from the list of devices, click **Delete**.

- To exit the Edit AVL Device Settings dialog box without making changes, click **Cancel** or the **Back to Devices Screen** link.
- To refresh the **Device Status** area, click the **Refresh** link. The page displays the last updated information for the device, and displays the current settings in all fields. Any unsaved changes to the fields are lost. Clicking the **Refresh** link does *not* tell the device to send its current position instantly.

Fields on the AVL Device Setting dialog box

The Edit AVL Device Settings dialog box contains the following fields.

`Device ID`

View-only. Displays the device ID.

`IP`

View-only. Displays the IP address of the device.

`Vehicle ID`

Enter a vehicle ID, if desired.

`Agency`

Select the agency the device belongs to.

`Label`

Displays a preview of the device's label. Labels are used when the device is displayed on the map without an assigned unit. Enter a new label, if desired.

> **NOTE**
>
> To ensure that dispatchers and officers know to whom the device belongs, it is recommended to enter the vehicle ID of devices assigned to vehicles, and to enter the name of the person or unit for devices that are not assigned to vehicles.

`Icon`

Select the icon for the device. If the drop-down list displays `Inherited`, then the icon selected for the agency in the **AVL Agency Manager** tab is used.

`Unit`

Select a unit to associate with the device, if desired. For information on assigning units, see the *CAD User Manual*.

`Device Type`

View-only. Displays the type of device.

`Text Color`

Select a text color for the label of the device. If the drop-down list displays `Inherited`, then the text color selected for the agency in the **AVL Agency Manager** tab is used.

If the Custom option is selected, then a second field appears. Enter a Hex code in the following format:

#RRGGBB

where *RR* is the red value, *GG* is the green value, and *BB* is the blue value.

`Background Color`

Select a background color for the label of the device. If the drop-down list displays `Inherited`, then the background color selected for the agency in the **AVL Agency Manager** tab is used.

If the Custom option is selected, then a second field appears. Enter a Hex code in the following format:

#RRGGBB

where *RR* is the red value, *GG* is the green value, and *BB* is the blue value.

> **NOTE**
>
> Flex uses a red background with white text to indicate devices with an alerted status. Therefore, red is not an option for the normal background color of an agency or device. For more information, see "Using AVL alerts" on page 25.

`Description`

Enter a description of the device, or additional information as needed.

Device Settings area

The **Device Settings** area contains the following fields, which are populated with data from the same fields in the **AVL Agency Manager** tab. If the device is configurable, then these fields can be modified as needed. If the device is not configurable, then these fields are view-only. Changes to these fields affect only the current device, and are not saved in the **AVL Agency Manager** tab.

`Report Minimum`

Displays the minimum amount of time, in seconds, that the device should wait between reports. Enter a new time, if necessary.

`Report Maximum`

Displays the maximum amount of time, in seconds, that the device should wait between reports. Enter a new time, if necessary.

`Report Distance`

Displays the minimum distance, in meters, that the GPS device must move for a report to send. Enter a new distance, if necessary.

`Tolerance`

Displays the minimum distance, in meters, that the GPS device must move for the software to count that movement as movement and not as GPS drift. Enter a new distance, if necessary.

`Stale Timeout`

Displays the time, in minutes, that the server should wait after the device has stopped responding before labeling the device as stale. Enter a new time, if necessary.

`Inactive Timeout`

Displays the time, in minutes, that the server should wait after the device has stopped responding before labeling the device as inactive. Enter a new time, if necessary. The time entered in the **Inactive Timeout** field must be longer than the time entered in the **Stale Timeout** field.

Device Status area

The **Device Status** area contains the following view-only fields.

`Status`

Displays one of the following as the status of the device:

- **Active**:The device is in use and reporting normally.
- **Stale**: The device is probably in use, but the time of the last report is longer than the report maximum setting.
- **Inactive**: The device may still be in use, but the time of the last report is longer than the inactive timeout setting.

– **Alerted.** The device has been alerted by the officer, through the emergency button on the officer's radio or in Mobile.

`Latitude`

Displays the last latitude recorded by the device.

`Longitude`

Displays the last longitude recorded by the device.

`Last Update`

Displays the date and time of the last update from the device.

`Last Movement`

Displays the date and time of the last movement from the device.

`Heading`

Displays the heading of the last movement from the device.

`Speed`

Displays the speed of the last movement from the device.

Blocking Flex configurations

The Flex configurations set up in the AVL manager can be blocked. If Flex configurations are blocked, then the configurations programmed into the device are used.

Blocking configurations on a World level

To block Flex configurations on a World level:

1. Select the **Properties** tab.
2. In the **Allow Configuration Blocking** field, select one of the following:
   – To use Flex configurations for all devices, select **None**.
   – To block Flex configurations for UNS devices, select **UNS**.
   – To block Flex configurations for server connection devices, select **TAIP**.

– To block both UNS and server connection devices, select **All**.

> **NOTE**
>
> Flex configurations for client connection devices cannot be blocked.

3. When finished, close the AVL Manager web application.

   The selected settings are applied.

Blocking configurations on an Agency level

To block Flex configurations on an Agency level:

1. Select the **AVL Agency Manager** tab.
2. From the **Agency List** area, select an agency.

   The Edit AVL Agency Settings dialog box opens
3. Do one of the following:
   – To use the Flex configurations for the agency, select the **Send Spillman Configurations** check box.
   – To block Flex configurations for the agency, clear the **Send Spillman Configurations** check box.
4. Repeat steps 2–3 for each agency to block.
5. When finished, close the AVL Manager web application.

   The selected settings are applied.

Blocking configurations for specific devices

To block Flex configurations for specific AVL devices:

1. Select the **AVL Manager** tab.
2. From the **Device List** area, select a device.

   The Edit AVL Device Setting dialog box opens.
3. Do one of the following:
   – To use the Flex configurations inherited from the agency settings, select the **Send Spillman Configurations** check box.
   – To block Flex configurations, clear the **Send Spillman Configurations** check box.
4. Repeat steps 2–3 for each device to block.
5. When finished, close the AVL Manager web application.

The selected settings are applied.

Viewing AVL Log Records

When AVL Logging is enabled, Log records are created in Flex that track data from each unit or device in AVL, including call information. AVL Log records can be searched for and viewed in Flex or exported and viewed in Google Earth™.

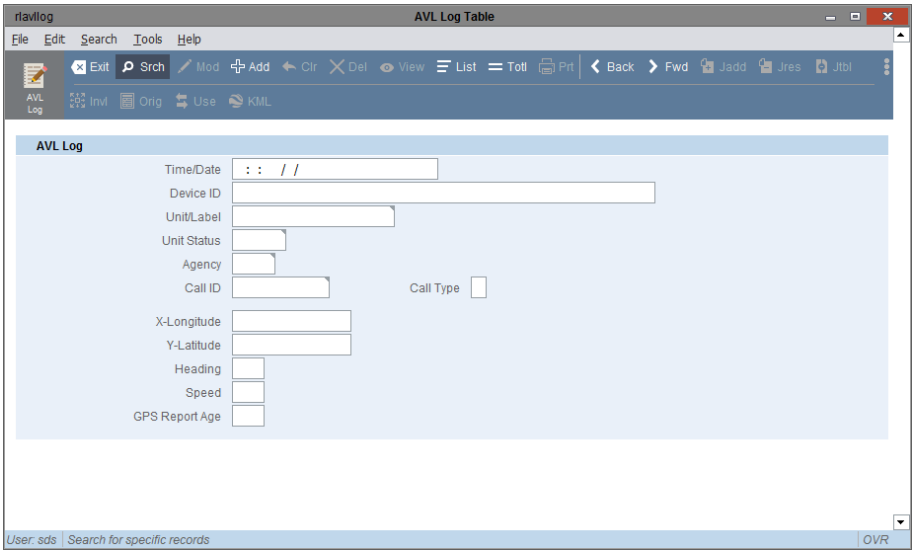
> **NOTE**
>
> Prior to viewing AVL Log records, AVL Logging must be enabled. For more information, see "Using the Properties tab" on page 47.

Viewing AVL Log records in Flex

To view AVL Log records in Flex:

1. At the command line, enter **`rlavllog`**.

   The AVL Log Table screen opens.



2. Click **Srch**, and then enter search criteria in the desired fields. For field descriptions, see "Fields on the AVL Log Table screen" on page 62.
3. Click **Accept** (Alt+A).

   The first record of the search set is displayed with information returned by the GPS device.
4. Do any of the following:

- To view the total number of records in the search set, click **Totl**.
- To view the list of total records, click the **List** button.
- To navigate through the search set, use the **Fwd** and **Back** buttons.

Fields on the AVL Log Table screen

The AVL Log Table screen contains the following fields.

`Time/Date`

Displays the time and date the AVL Log record was reported.

`Device ID`

Displays the identification of the device associated with the AVL Log record.

`Unit/Label`

Displays the label or unit name associated with the AVL Log record.

`Unit Status`

Displays the status of the unit when the AVL Log record was reported.

`Agency`

Displays the code of the agency to which the device belongs.

`Call ID`

If the unit or officer was assigned to a call at the time of the AVL Log record, then the long term call identification is displayed.

`Call Type`

If the unit or officer was assigned to a call at the time of the AVL Log record, then the type of call is displayed.

`X-Longitude`

Displays the longitude reported by the GPS device at the time of the AVL Log record.

`Y-Latitude`

Displays the latitude reported by the GPS device at the time of the AVL Log record.

`Heading`

Displays the heading reported by the GPS device at the time of the AVL Log record.

`Speed`

Displays the speed reported by the GPS device at the time of the AVL Log record.

`GPS Report Age`

Displays one of the following values to indicate how timely the data reported by the GPS device is:

- **2**: Fresh, less than 10 seconds
- **1**: Old, greater than or equal to 10 seconds
- **0**: Not available

Viewing AVL log records in Google Earth

AVL Log records can be viewed using Google Earth, which shows the path of one or more devices over a period of time on a map.

Google Earth uses Keyhole Markup Language (KML) files (`.kml`) to display a series of records. Flex can be used to create a KML file using your AVL Log records.

It is recommended to have archive file programs or utilities on your server, such as ZIP or Java Archive (JAR), to improve system performance.

Exporting AVL Log records to Google Earth

To view AVL Log records in Google Earth, they must be saved as a compressed KML file (`.kmz`) and then exported.

To export AVL Log records:

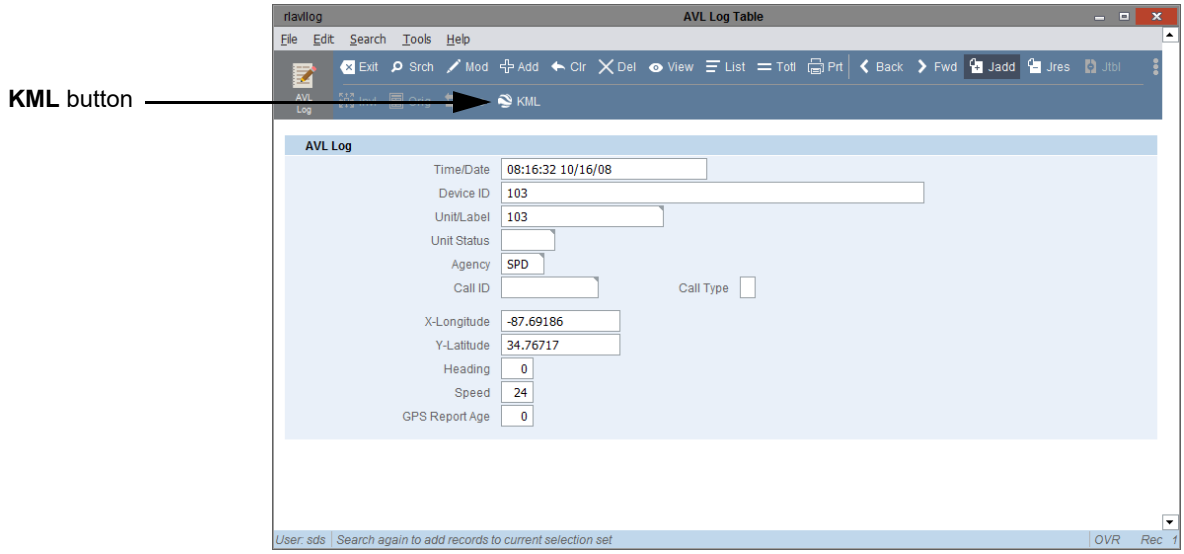
1. In Flex, search for the desired AVL Log records. For more information, see "Viewing AVL Log records in Flex" on page 61.

NOTE

The `rlavllog` table does not have the same record limit as other database tables. AVL Logging can produce very large search sets. For example, a single unit can have thousands of AVL Log records for a single shift. Therefore, it is recommended to limit the size of the search set to simplify the display in Google Earth.

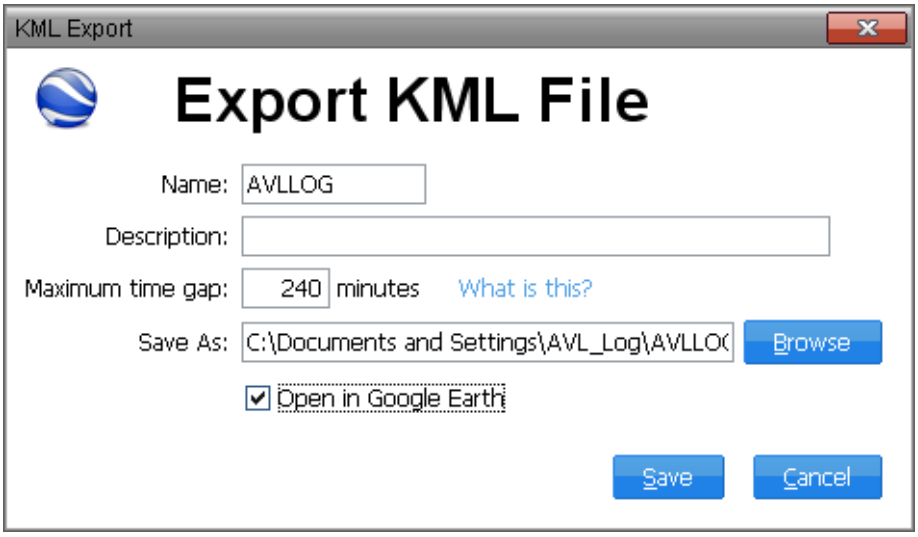
The size of the search set can be limited by searching only for a specific time frame, or for records that contain a speed value greater than 0.

Once a search set is in place, the **KML** button is enabled.



2. Click the **KML** button.

The KML Export screen opens.



3. In the **Name** field, enter the name to display in Google Earth. Google Earth displays the file name in the **Places** list.
4. In the **Description** field, enter the description to display in Google Earth. Google Earth displays the description under the file name in the **Places** list.
5. In the **Maximum time gap** field, enter the maximum amount of time, in minutes, allowed between AVL updates within a track. For a field definition, rest your mouse pointer over the **What is this** link. For more information about tracks, see "Tracks" on page 69. If more than the specified amount of time elapses between AVL updates for any given device, then a new track starts for that device, which creates separate tracks for the same device between shifts. The time limit does not apply while a unit is assigned to a call.
6. In the **Save As** field, enter a file name and path for the KML file. If necessary, use the **Browse** button.
7. To immediately open the file in Google Earth, select the **Open in Google Earth** check box.
8. Click **Save**.

   The software exports the KML file to the location designated in the **Save As** field. If the **Open in Google Earth** check box is selected, then Google Earth opens and displays tracks for each unit from your AVL Log Table search set.

Retrieving a saved KML file

If the **Open in Google Earth** check box on the Export KML File screen is not selected, or if the KML file needs to be opened again, then the KML file can be retrieved at a later date and viewed in Google Earth, either using Windows Explorer or Google Earth.

Windows Explorer

To retrieve a KML file using Windows Explorer:

1. Open Windows Explorer.
2. Navigate to the folder that contains the compressed KML file (`.kmz`).
3. Double-click the file.

   Google Earth opens and displays the KML file.

Google Earth

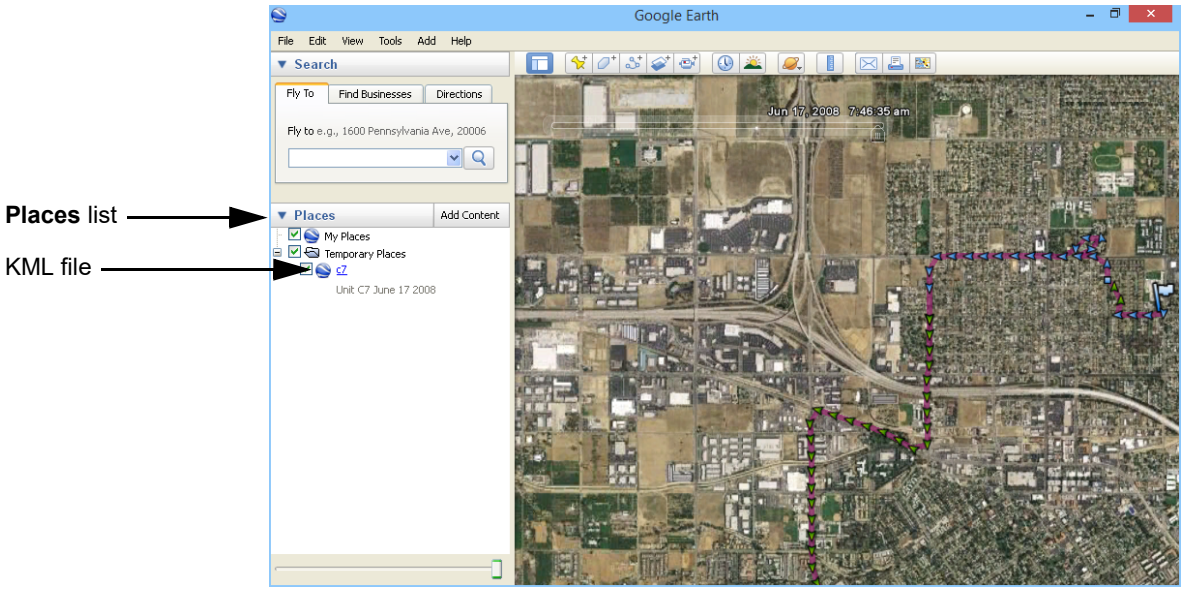
To retrieve a KML file using Google Earth:

1. With Google Earth open, select **File** menu > **Open**.
2. Navigate to the folder that contains the KML file.
3. Select the KML file and click **Open**.

   Google Earth displays the KML file.

Understanding Google Earth

Once a KML file has been exported, the selected AVL Log records can be viewed in Google Earth. Use Google Earth to navigate and play back your AVL Log records. This manual does not cover all features of Google Earth, but only those basic features that relate to Flex. For more information about Google Earth, see Google Earth's online help.



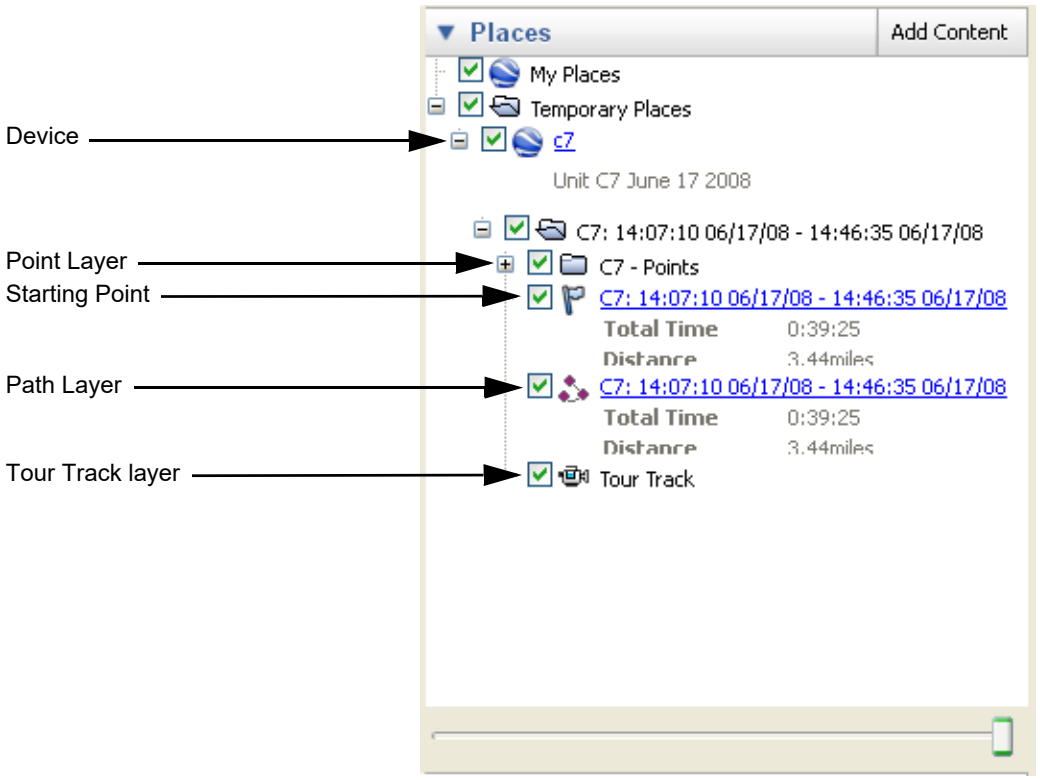
The following lists some of the features of Google Earth.

Places

Google Earth displays your open KML files in the **Places** list. To open additional KML files, see "Retrieving a saved KML file" on page 66.

When KML files are first opened, the files are displayed in the **Temporary Places** folder. Items located in the **Temporary Place** folder are not available in the next Google Earth session. To make the files permanently available, save the items to the **My Places** folder by dragging the file to the folder.

Each KML file can be expanded to display the devices contained within the file.



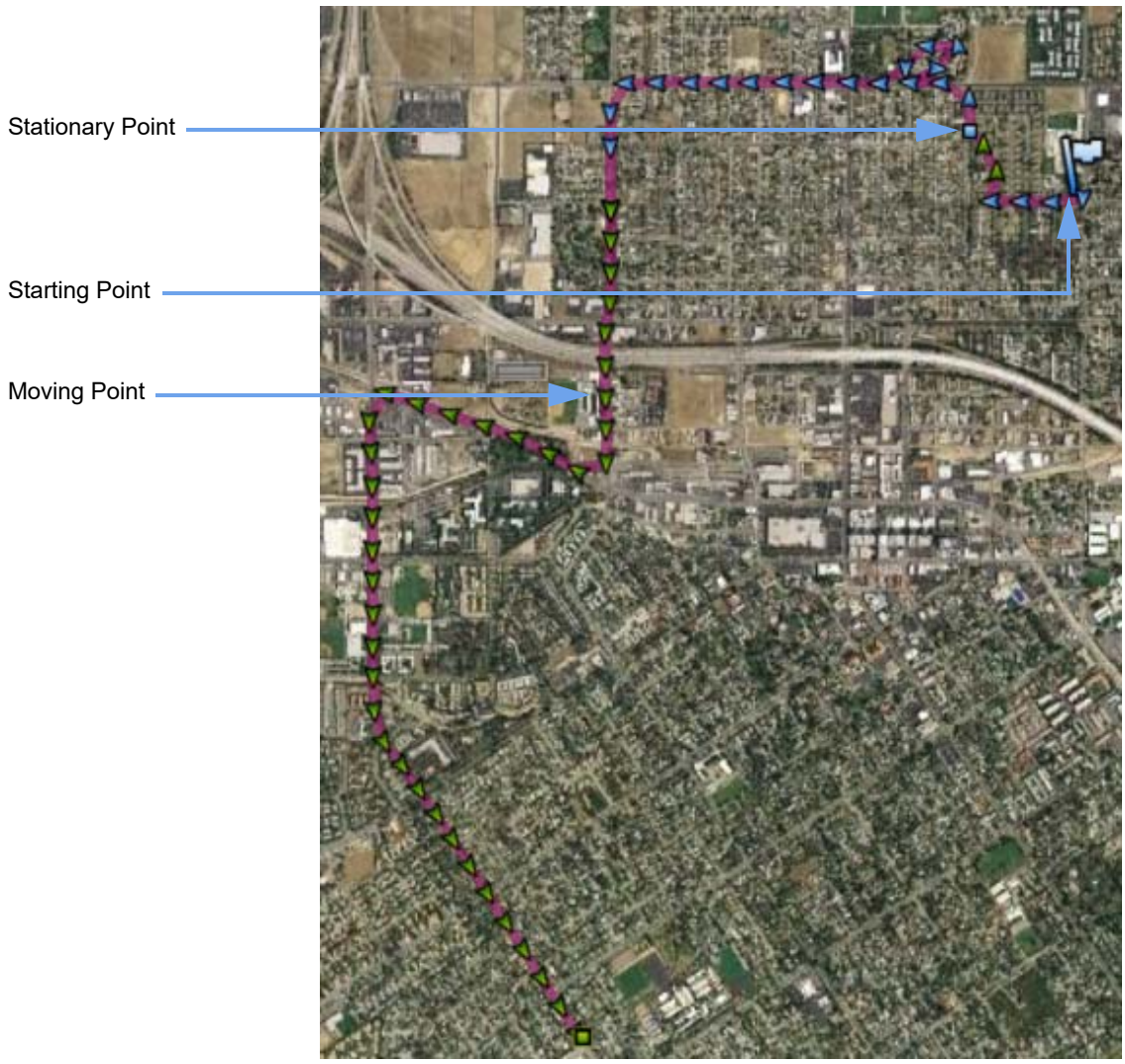
Each device can be expanded to display check boxes for the following map layers:

- **Points.** Displays each AVL Log record on the map as a point.
- **The Starting Point.** Designates the starting point with a flag.
- **Path.** Displays a colored path that connects points in the AVL Log record that represent the path traveled by the unit.
- **Tour track**. Displays a tour of the AVL Log records when the **Play Tour** button is clicked, and must be selected for tours to be available. For more information, see "Tours" on page 72.

To turn a layer on or off, select or clear the appropriate check box.

Tracks

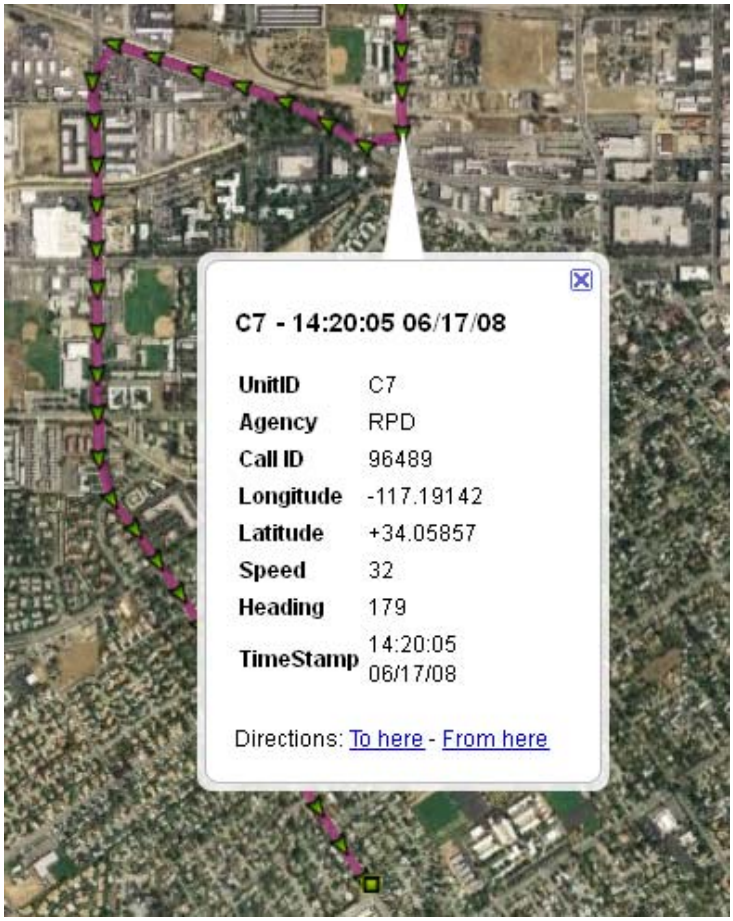
Google Earth displays a track indicating the path traveled for each unit in the KML file.



Each track is designated by the following elements:

- **Color.** Displays a unique color indicating the path of the device.
- **Points.** Displays points for each AVL Log record. If the device was stationary at the time of the AVL Log record, then a square is displayed. If the device was moving at the time of the AVL Log record, then an arrow pointing in the direction the device was moving is displayed. The color of the points changes if the unit was on a call.

To view the unit number and time of the point, rest your mouse pointer on the point. To view additional AVL Log details, click the point to open a display similar to the following example.

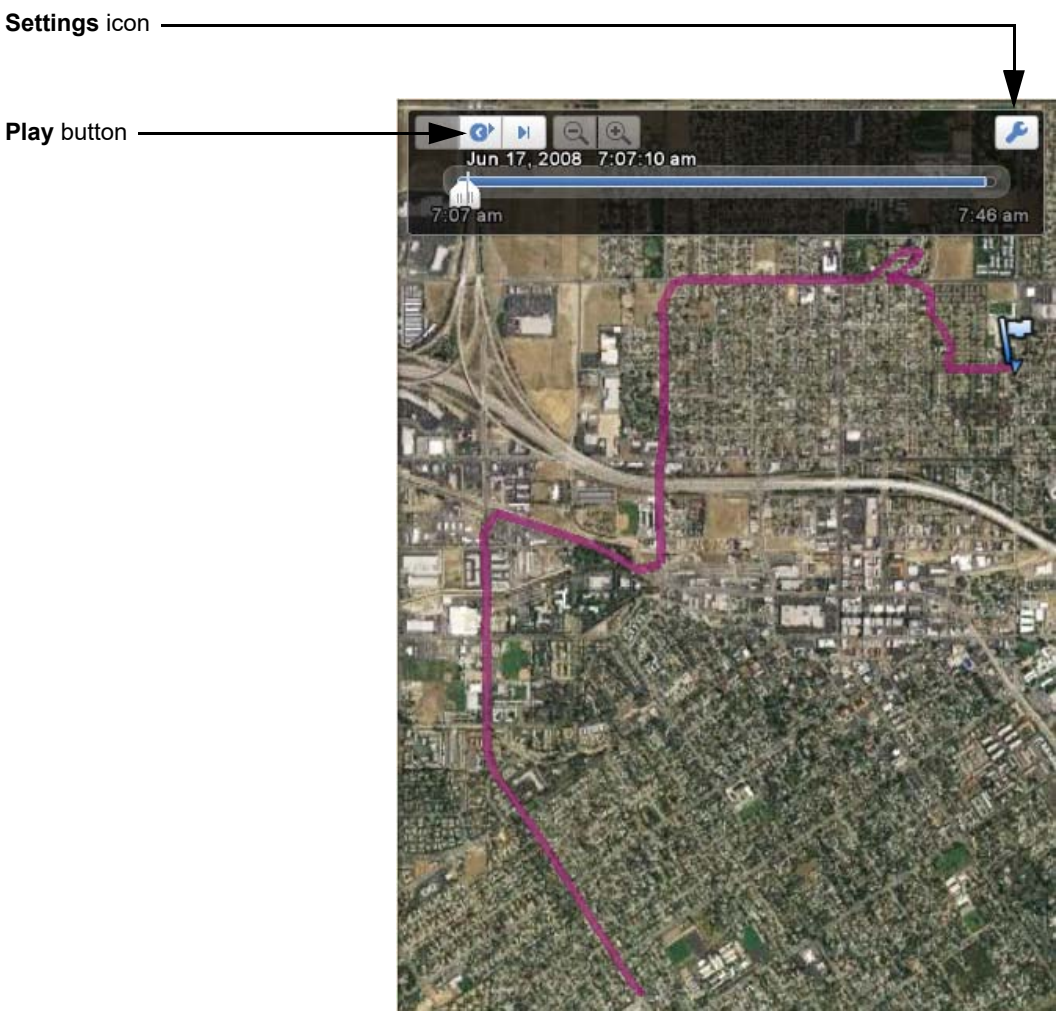


Timelines

AVL Log record information can be viewed sequentially in Google Earth by using the Google Earth time slider.

To view a timeline:

1. From the **Places** list, select the desired KML file. If the KML file has multiple devices, expand the KML file and select the desired device.



2. Move your mouse pointer to the upper-left corner of the map to display the Google Earth time slider.

> **NOTE**
>
> If necessary, click the **Settings** icon in the time slider to change the settings.

3. Click the **Play** button.

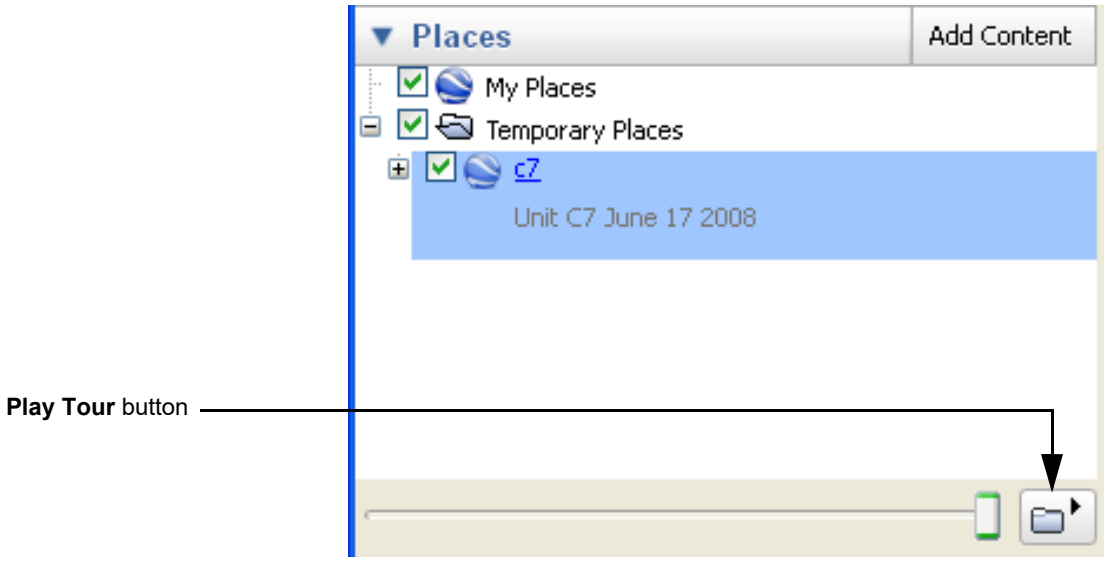
   Google Earth displays a point for each AVL Log record according to the timeline settings.

Tours

Tours of your KML file can be played. Tours are guided experiences where the software moves to different points on the map along a predetermined path.

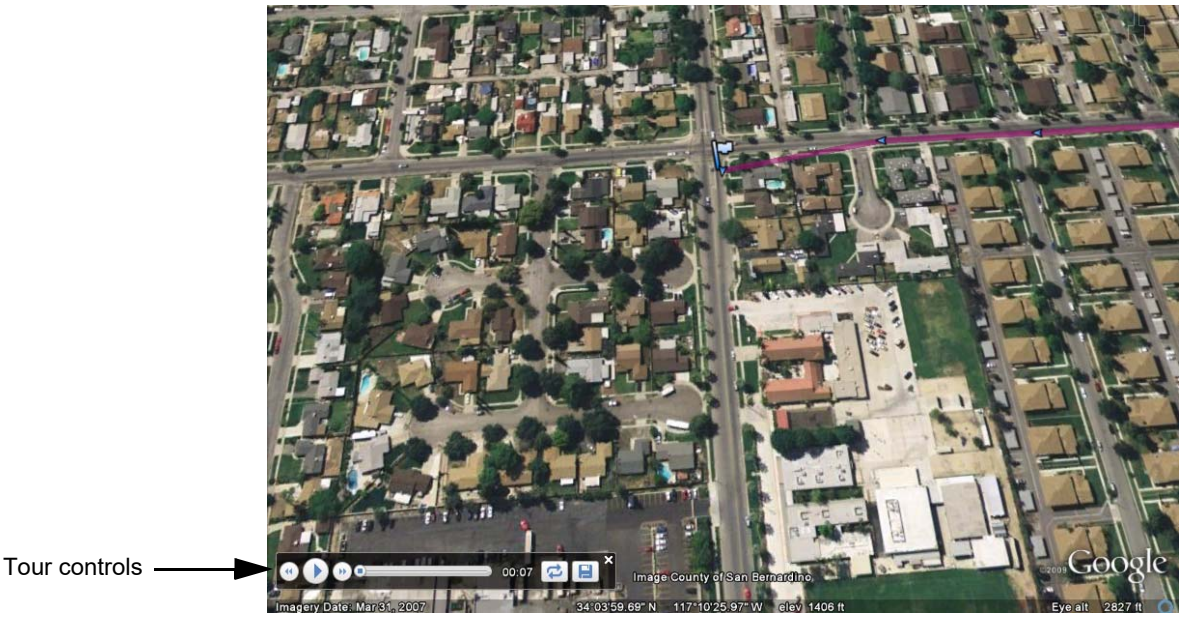
To play a tour:

1. With the KML file loaded in Google Earth, select the desired file. If there are multiple devices, then expand the KML file and select the desired device. If there are logs for multiple dates in the KML file, then select the desired date. Multiple dates and devices can be selected.



2. Click the **Play Tour** button.

Google Earth begins playing the tour in the 3D viewer. Tour controls appear in the lower-left corner of the map.



3. To look around as the tour plays, drag the view.